KISS, Jozsef, dr.

On cervical pregnancy. Magy.noorv.lap. 21 no.1:24-31 Ja '60.

1. A XX. ker. Szulo- es Nobetegkorhaz kozlemenye (Igazgato-foorvos: Kiss Jozsef, dr.

(PREGNANCY ECTOPIC case reports)

NAGY, Andor, dr.; KISS, Josef, dr.

Activity of oncological dispensaries in the prevention of cancer and outpatient services for cancer patients. Nepegeszsegugy 42 no.10: 301-304 O '61.

1. Koslemeny as Orszagos Onkologiai Intezetbol (igazgato: Vikol Janos dr.).

(NEOPLASMS hosp & clin) (HOSPITAL OUTPATIENT SERVICES)

KISS, Jozsef, dr.; MAYLATH, Jozsefne okl. vegyesz

Early diagnosis of arteriosclerosis and allied disorders with the aid of an index. Orv.hetil. 102 no.31:1454-1456 30 Jl '61.

1. Budapesti Janos Korhaz, III. Belosztaly.

(ARTERIOSCLEROSIS diag)

ACC NR: AT6023533 SOURCE CODE: HU/2505/65/027/002/0179/0185

AUTHOR: Maylath-Palagyi, Jolanda--Palad'i-Maylat, Y.; Banga, Ilona; Kiss, Jozsef--Kishsh, Y.

ORG: I. Institute of Pathological Anatomy and Experimental Cancer Research, Medical University of Budapest (Budapesti Orvostudomanyi Egyetem, I. sz. Korbonctani es Kisorleti Rakkutato Intezet)

TITLE: Effect of elastase on the lipid metabolism of arteriosclerotic patients 22

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 27, no. 2, 1965, 179-185

TOPIC TAGS: circulatory system disease, blood pressure, ketone, biologic metabolism, drug treatment

ABSTRACT: Thirty patients with severe arteriosclerosis and hypertension were given 3 x 1 and 3 x 2 elastase pills daily for 6 weeks, in order to determine whether lipid metabolism can be influenced with elastase. The results revealed an average drop of 17 per cent in the level of cholesterol. The number of ketone bodies increased by an average of 14 per cent, that is, they became normalized. The arteriosclerotic index (cholesterol mg per cent/ ketone bodies mg per cent) which was elevated before the treatment, was nearly normal following it. As a result of the treatment, a 36 per cent increase was observed in the elastase inhibitor values. On the basis of the experimental results it is assumed that elastase does play a role in lipid metabolism. Orig. art. has: 4 figures and 5 tables. [JPRS]

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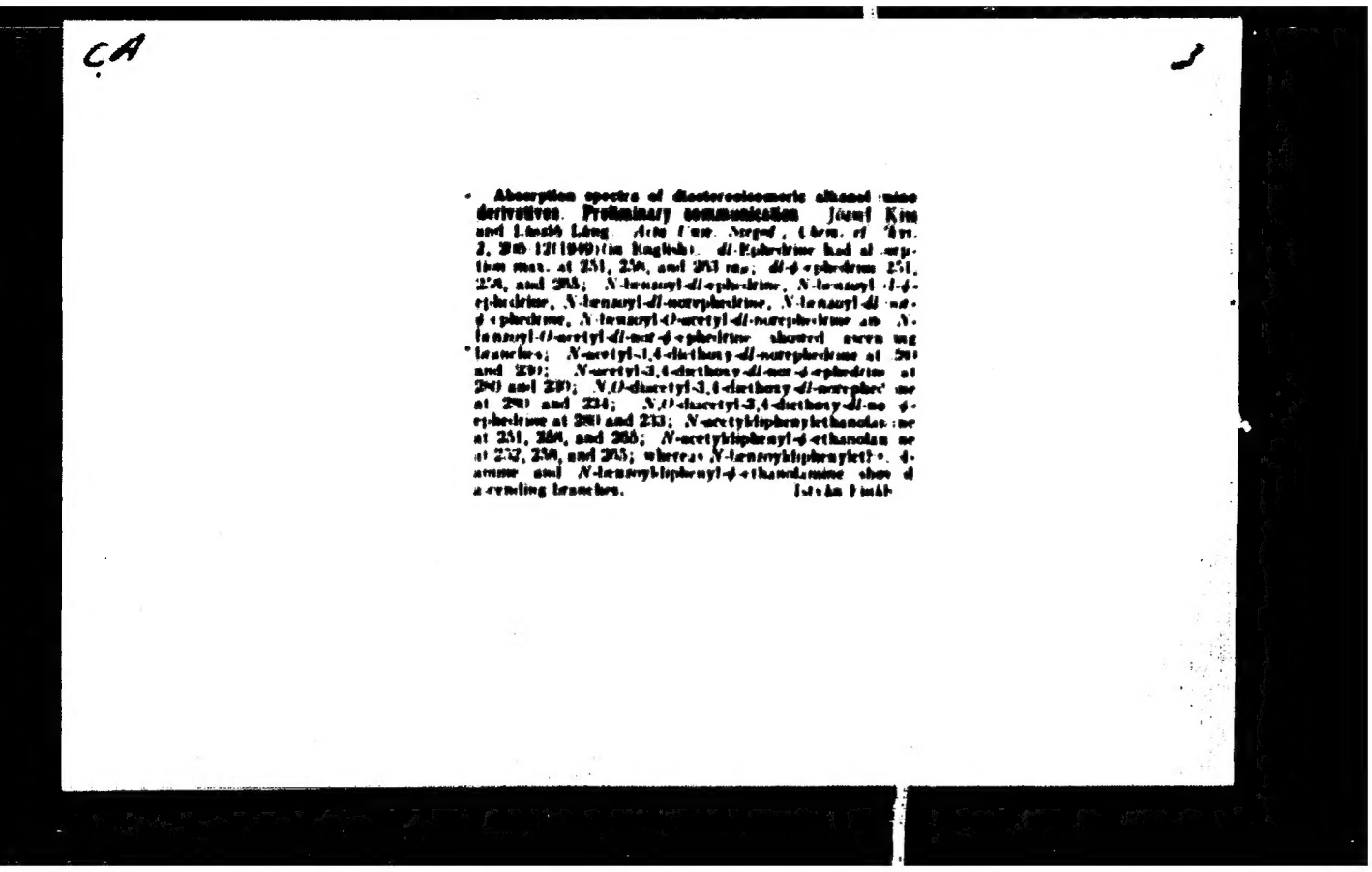

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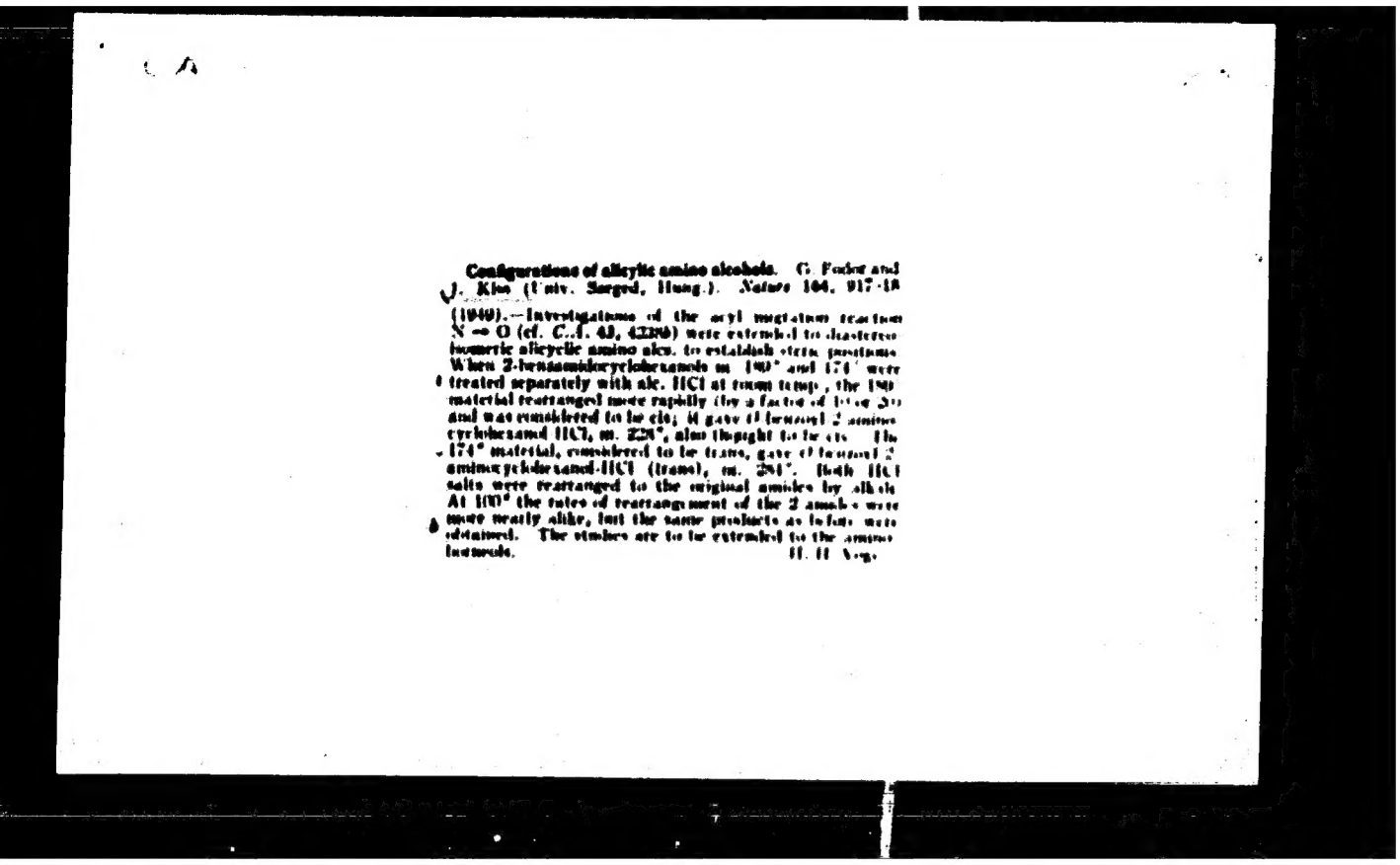
3

Absorption spectra of diastereoisomeric alkaloid amine derivatives. Preliminary communication. József Kiss and László Láng. *Acta Univ. Szeged., Chem. et Phys.* 3, 205-12(1949)(in English). *dl*-Ephedrine had absorption max. at 251, 258, and 263 mμ; *dl*-ψ-ephedrine 251, 258, and 263; *N*-benzoyl-*dl*-ephedrine, *N*-benzoyl-*dl*-ψ-ephedrine, *N*-benzoyl-*dl*-norephedrine, *N*-benzoyl-*dl*-norψ-ephedrine, *N*-benzoyl-*O*-acetyl-*dl*-norephedrine and *N*-benzoyl-*O*-acetyl-*dl*-norψ-ephedrine showed curves ending branches; *N*-acetyl-3,4-diethoxy-*dl*-norephedrine at 280 and 289; *N*-acetyl-3,4-diethoxy-*dl*-norψ-ephedrine at 280 and 289; *N,O*-diacetyl-3,4-diethoxy-*dl*-norephedrine at 280 and 234; *N,O*-diacetyl-3,4-diethoxy-*dl*-norψ-ephedrine at 280 and 233; *N*-acetylbiphenylethanolamine at 251, 258, and 265; *N*-acetylbiphenyl-ψ-ethanolamine at 232, 238, and 263; whereas *N*-benzoylbiphenylethylamine and *N*-benzoylbiphenyl-ψ-ethanolamine show ending branches. István Puskás



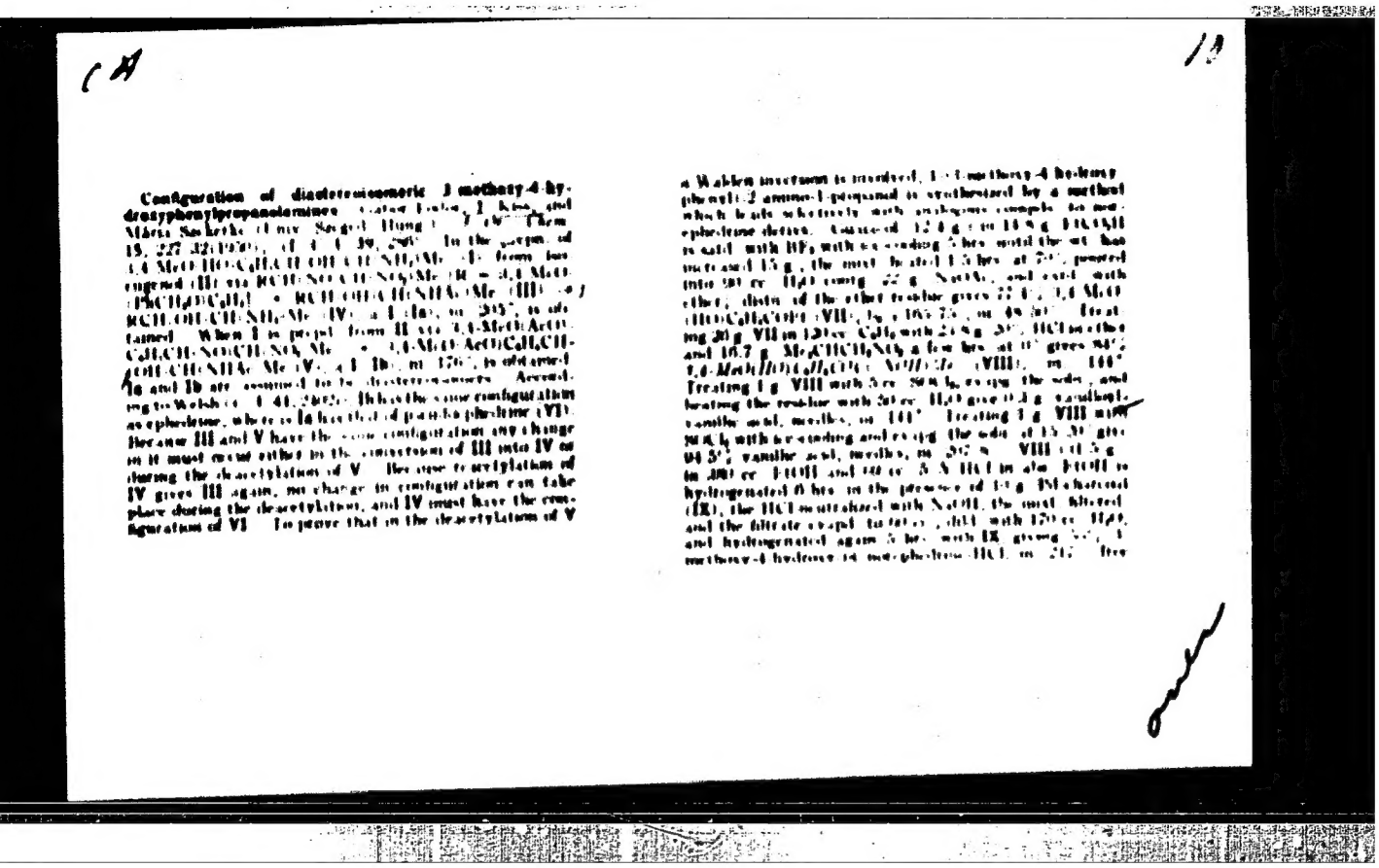
Configurations of alicyclic amino alcohols. G. Fodor and J. Kiss (Univ. Szeged, Hung.). *Nature* 164, 917-18 (1949).—Investigations of the acyl migration reaction N → O (cf. *C.A.* 43, 4339b) were extended to diastereoisomeric alicyclic amino alcs. to establish steric positions. When 2-benzamidocyclohexanols m. 140° and 174° were treated separately with alc. HCl at room temp., the 140° material rearranged more rapidly (by a factor of [illegible] 5×) and was considered to be cis; it gave (1-benzoyl-2-aminocyclohexanol HCl, m. 228°, also thought to be cis. The 174° material, considered to be trans, gave (1-benzoyl-2-aminocyclohexanol-HCl (trans), m. 251°. Both HCl salts were rearranged to the original amides by alkali. At 100° the rates of rearrangement of the 2 amides were more nearly alike, but the same products as before were obtained. The amides are to be extended to the amino isomers. H. H. Wasserman

CP

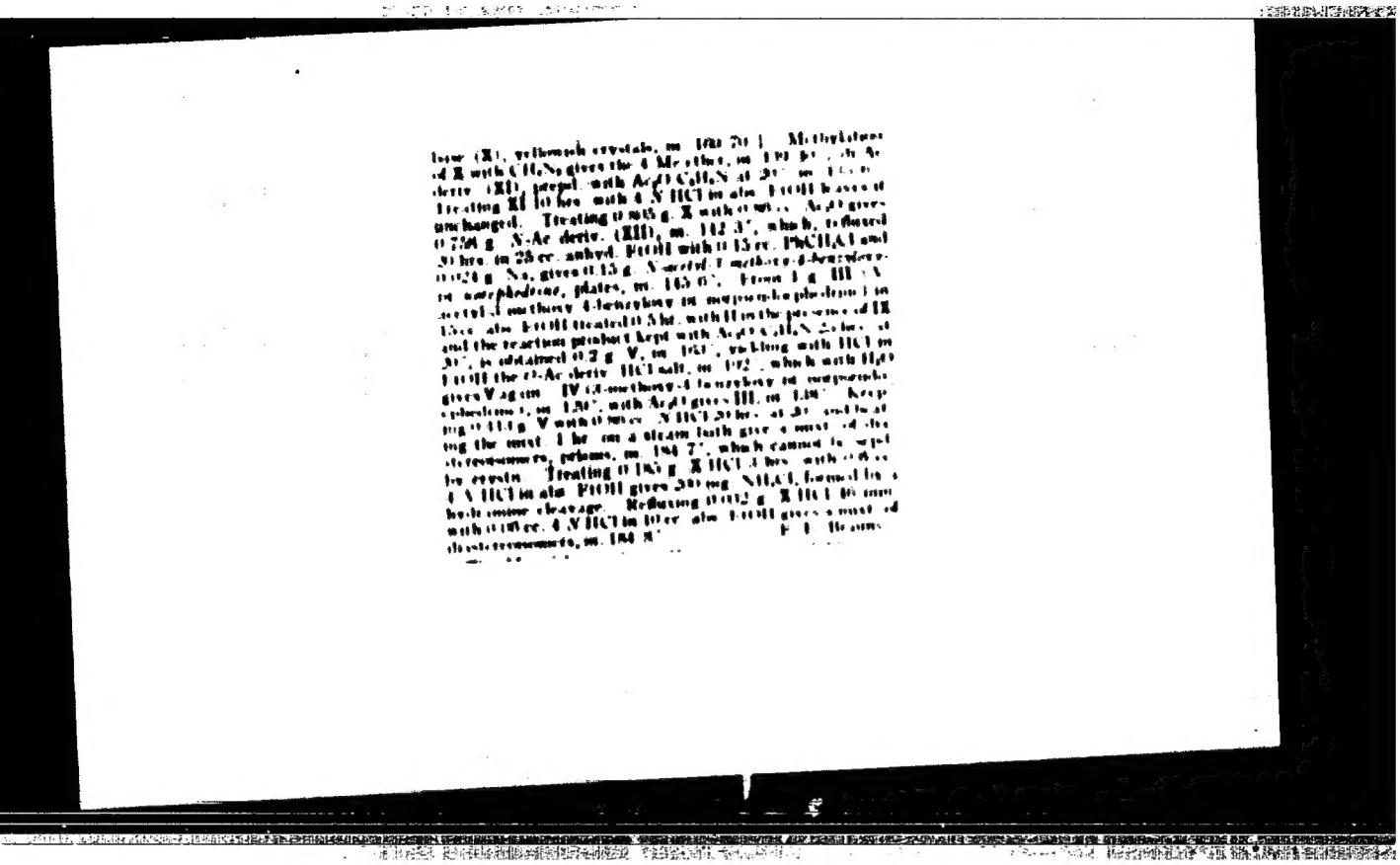
Organic Chemistry - 10

The synthesis of DL-*erythro*-**3,4-dihydroxyphenylserine (noradrenalinecarboxylic acid).** G. Fodor and J. Kiss (Univ., Szeged, Hung.). *Acta Univ. Szeged., Chem. et Phys.* **2**, 20-28 (1949) (in English). The previously unknown racemate of noradrenalinecarboxylic acid (I) (same configuration as ephedrine) was prepd. by the Hartung amino acid synthesis. On treatment with alkali, I decarboxylated easily. Enzymes, such as an ext. of guinea-pig kidney, also partly decarboxylated I, proving that its behavior differs from that of the racemates of the isomeric pseudoephedrine series. 3,4-$(HO)_2C_6H_3COCH_2CO_2Et$ (II), m. 110-20°, was obtained by introducing HF gas into 22 g. pyrocatechol in 51 g. EtH malonate at 35-40° and cooling with ice until the increase in wt. was 28 g., heating on a steam bath 60 min., pouring with stirring into 50 g. NaOAc in 200 ml. water, extg. the oily suspension with BuOH or ether, drying the solvent on fused Na_2SO_4, and distg. *in vacuo*. *Et* (α-*oximino-3,4-dihydroxybenzoyl*)*acetate* (III) was prepd. by adding 18 g. 20% ether soln. of HCl to 23 g. II in 100 ml. dry ether, then, slowly at 0°, 11 g. freshly distd. BuONO in 25 ml. abs. ether, keeping overnight in a refrigerator, and removing the solvent at 30°. *Et noradrenalonecarboxylate* (IV), m. 112-20° (decompn.), was obtained by hydrogenating 20.3 g. III in 120 ml. abs. EtOH over Pd-charcoal in the usual manner 12 hrs. in the presence of 60 ml. 4.0 N HCl in abs. EtOH, filtering, evapg. *in vacuo* at 30°, dissolving the residue in abs. EtOH, evapg. again, and drying in a desiccator. In the alk. hydrolysis of IV, 2.8 g. IV was shaken with 60 ml. NaOH soln. 1 hr. in a current of H, neutralized with HCl, shaken again in a current of H, decolorized with 0.1 g. 10% Pd charcoal in a current of H, and filtered. The product was noradrenaline, proving that decarboxylation took place. When 3 g. IV was hydrolyzed in 30 ml. N HCl in a current of H at 30° for 1 hr., treated further as above, and the soln. of the product treated with the decarboxylase of guinea-pig kidney, in the case of the threo derivs. obtained by sapon., no CO_2 formation was observed, whereas the substances obtained by sapon. of acidified erythro compds. generally developed measurable amts. of CO_2. The product obtained in this acid hydrolysis was I.HCl, 3,4-$(HO)_2C_6H_3CH(OH)CH(CO_2H)NH_2$.HCl with the *erythro* structure.

István Finály



Configuration of diastereoisomeric 3-methoxy-4-hydroxyphenylpropanolamines



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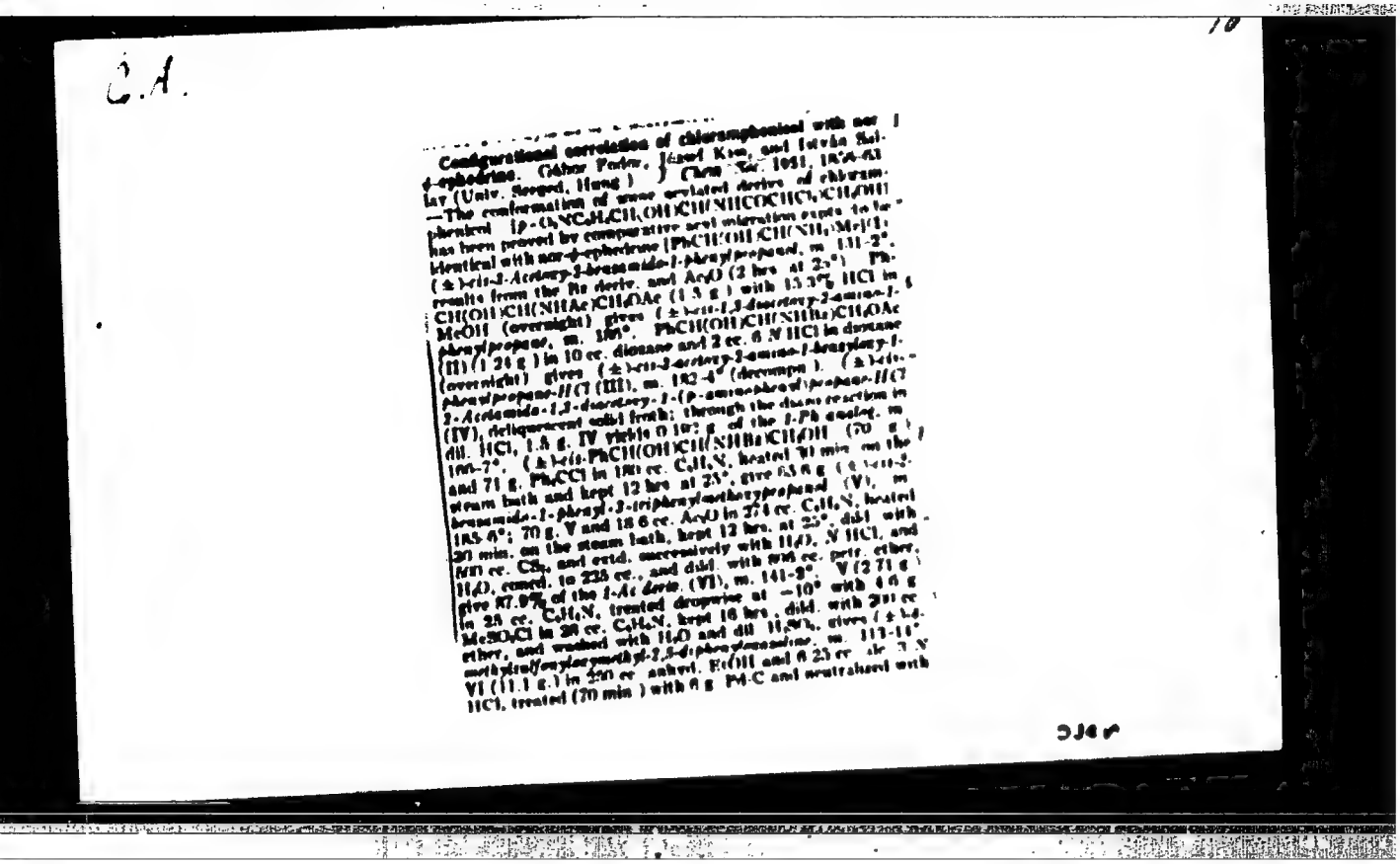
Acyl migration O → N in the diastereomeric 2-aminocyclohexyl benzoates. Gábor Fodor and L. Kiss (Univ. Szeged, Hung.). *J. Am. Chem. Soc.* 72, 2385-7(1950).—*cis*-2-Benzamidocyclohexanol (I) (2.5 g.) in 8.7 cc. abs. EtOH and 5 cc. *N* abs. EtOH-HCl, heated 2 hrs. at 100°, gives 40% unchanged I and 48% *cis*-2-aminocyclohexyl benzoate HCl (II), m. 228°. The *trans*-isomer (III) of I similarly gives 43% recovered III and 46% of the *trans*-isomer (IV) of II, m. 274°. II (0.280 g.) in 20 cc. H_2O, treated with 0.86 cc. *N* NaOH, gives an oil which, on scratching and addn. of excess alkali, yields 0.171 g. I. (0.221 g. IV with 0.9 cc. *N* NaOH gave an oil which did not crystallize until the further addn. of 0.6 cc. alkali, when it yielded 0.120 g. III. The intermediate oil from II in *cis*-2-aminocyclohexyl benzoate, which can be isolated by ... mediate toxylation in C_6H_6 to the *N*-acyl deriv. (V), m. 180°. *cis*-2-Aminocyclohexanol HCl (... g.) in ... cc. H_2O and 0.8 g. *p*-$MeC_6H_4SO_2Cl$ in 3 cc. C_6H_6 stirred with excess alkali, give 0.7 g. of the *N*-acyl deriv. (VI), m. 182-4°, with HCl in C_6H_5N it yields V. Similarly 1.125 g. IV yields 0.9 g. of the *trans*-isomer (VII) of V, m. 166-70°. The *trans*-isomer of VI, m. 128°, gives VII with HCl in C_6H_5N. A mechanism of the O → N acyl migration is presented.

C. J. West



C.A.

10

Configurational correlation of chloramphenicol with nor-l-ephedrine. Gábor Pethe, József Kiss, and István Sallay (Univ. Szeged, Hung.) J. Chem. Soc. 1951, 1854-63. —The conformation of some correlated derivs. of chloramphenicol has been proved by comparative acyl migration expts. to be identical with nor-l-ephedrine [PhCH(OH)CH(NH2)Me] (I); (±)-threo-2-Acetoxy-2-bromoamido-1-phenylpropanol, m. 131-2°, results from the Br deriv. and AcO (2 hrs. at 2°). PhCH(OH)CH(NHAc)CH2OAc (II) (1.24 g.) in 10 cc. dioxane and 2 cc. 6 N HCl in dioxane MeOH (overnight) gives (±)-threo-1,3-dioxy-2-amino-1-phenylpropane, m. 180°. PhCH(OH)CH(NH2)CH2OAc (overnight) gives (±)-threo-2-acetoxy-2-amino-1-hydroxy-1-phenylpropane-HCl (III), m. 182-4° (decomps.). (±)-threo-2-Acetamido-1,3-dioxy-1-(p-aminophenyl)propane-HCl (IV), deliquescent solid from; through the diazo reaction in dil. HCl, 1.5 g. IV yields 0.18 g. of the 1-Ph cooling, m. 100-7°. (±)-threo-PhCH(OH)CH(NH2)CH2OH (70 g.) and 71 g. PhCCl in 180 cc. C5H5N, heated 30 min. on the steam bath and kept 12 hrs. at 25°, give 65.6 g. (±)-threo-2-bromamido-1-phenyl-3-triphenylmethoxypropanol (V), m. 185.4°; 70 g. V and 18.6 cc. Ac2O in 274 cc. C5H5N, heated 20 min. on the steam bath, kept 12 hrs. at 25°, did. with 800 cc. CS2, and extd. successively with H2O, N HCl, and H2O, concd. to 225 cc., and did. with 900 cc. petr. ether, give 87.9% of the 1-Ac deriv. (VI), m. 141-2°. V (2.71 g.) in 25 cc. C5H5N, treated dropwise at −10° with 4.6 g. MeSO2Cl in 20 cc. C5H5N, kept 16 hrs., did. with 200 cc. ether, and washed with H2O and dil. HCl, gives (±)-threo-methylsulfonyloxymethyl-2,3-diphenylmethoxime, m. 113-14°. VI (11.1 g.) in 250 cc. anhyd. EtOH and 6.25 cc. 3 N HCl, treated (70 min.) with 6 g. Pd-C and neutralized with

CA

Configuration of diastereoisomeric 2-aminocyclohexanols and a suggested mechanism for acyl migration N→O. Gábor Fodor and J. Kiss (Univ. Szeged, Hung.). *Acta Chim. Hung.* 1, [illegible] (1951) (in English). 2-Benzamidocyclohexanol (I), m. [illegible], was obtained in 18 g. yield by treating a suspension of [illegible] g. o-AcNHC$_6$H$_4$OH in [illegible] ml. [illegible] with [illegible] g. wet Raney Ni in an autoclave [illegible] with H under [illegible] kg./sq. cm. pressure at [illegible]° with continuous shaking, allowing to stand 2 hrs. at this temp. and pressure, filtering, evapg. the filtrate in vacuo at 35-40°, and boiling the residue with [illegible] ml. Me$_2$CO a few min. *dl-cis-2-Benzamidocyclohexanol* (II), m. [illegible]°, was obtained in 17.2 g. yield by refluxing 18 g. I with [illegible] ml. 18% HCl 2 hrs., evapg. the soln., diln. with water to [illegible] ml., and benzoylating by the Schotten-Baumann reaction. *dl-trans-2-Benzamidocyclohexanol* (III) was obtained by ammonolysis of 2-chlorocyclohexanol followed by a Schotten-Baumann benzoylation of the amino alc. produced (cf. McCasland, *et al.*, C. A. 43, [illegible]). When II was treated with 2 moles HCl, [illegible]°, *dl-cis-O-benzoyl-2-aminocyclohexanol-HCl*, m. [illegible]°, was obtained. If the amt. of HCl added was increased to [illegible] or 35 moles, the yields were 33 and [illegible]%, resp. Similar treatment of III gave yields below [illegible]%. When II or III was treated 2 hrs. in a sealed tube at [illegible]° [illegible] moles HCl was sufficient to reach a yield of [illegible]%. These results are interpreted by assuming that the acyl shift N→O occurs in 2 steps. First an unstable N-acylamide HCl is formed easily in nonpolar solvents, such as CHCl$_3$. This product is decomposed, or rearranged in polar solvents or by heating. In alc. the equil. between amide and amide salt is shifted toward the amide, and an excess of HCl shifts it toward the amide salt. The 2nd step of the acyl shift is a rearrangement to an O-acylamide salt, the rate of which is detd. by the distance between the reacting groups. The varying distance between the substituents may also explain the occurrence of an incomplete acyl migration even for the cis form. The marked difference between the rates of N→O acyl migration of the stereoisomeric 2-benzamidocyclohexanols at room temp. is evidence of their steric structure.

Istvan Fenale

FODOR,G.; TOT,I.; KOVACS,E.; KISS,J.

Synthesis of chloroamphenicol. Izv.AN SSSR. Otd.khim.nauk no.3: 440-451 My-Je '440-451 (MIRA 8:9)

1. Institut organicheskoy khimii Universiteta g. Seged, Vengriya (Acetamide)

Note on preparation of stereoisomeric α,β-diphenyl-β-hydroxyethylamines by Wolfard, *et al.* [illegible]

Acta Chim. Acad. Sci. Hung. [illegible]

English).—Review of literature concerning the stereochemistry of the α,β-diphenyl-β-hydroxyethylamines and exptl. details for prepn. of the high-melting racemate (I) of 1,2-diphenyl-2-aminoethanol. Benzil monophenylhydrazone (4.8 g.) in 200 ml. abs. EtOH mixed with 10 ml. 6*N* HCl in abs. EtOH, and 1 g. 10% Pd-C in 1 hr absorbed 1080 ml. H (calcd. 1010 ml.); evapn. of the EtOH and neutralization of the I.HCl in 100 ml. water with 10% NaOH gave 3.1 g. (20.5%) I, m. 184–6°. M. D. A.

Reductive cleavage of derivatives of one mono(phenyl-hydrazone). [illegible] (Univ. Szeged, Hung.). *Acta Chim. Acad. Sci. Hung.* 3, 100-208(1953)(In German).—The method described earlier (cf. preceding abstr.) was extended to obtain other aryl alkanolamines by the reductive cleavage of benzil monophenylhydrazone over Pd-C. Norephedrine was prepd. in good yield in this way from PhCOC(:NNHPh)Me (I). This confirms the correctness of the expts. of Auwers and Ludewig (*C.A.* 31, 6735) as against the statements of Kolb [*Ann.* 291, 287(1896)] proving that I is a phenylhydrazone deriv. In the reduction of PhN:NCH(CHO)Bz (Ia) under similar conditions both the N—N bond and the C—N bond are broken. The BzCH(NH$_2$)-CHO formed is stabilized, by dimerization or polycondensation. PhNHNH$_2$ formed here as a by-product is partly reductively cleaved to NH$_3$ and PhNH$_2$. The ultraviolet absorption spectrum of Ia, and the behavior of Ia when treated with reagents characterizing various radicals confirms the probability of the existence of a hydrogen bridge or of an inner salt.

István Finály

KISS, J.

Hungarian Technical Abst.
Vol. 6 No. 1
1954

Chem 4

14. The trans-ethylenic configuration of sphingosine — *A sfingozin transz etilén szerkezete* — J. Kiss and F. Kiss (Hungarian Journal of Chemistry — *Magyar Kémiai Folyóirat* — Vol. 59, 1953, No. 1, pp. 29–31, 6 figs.)

Triacetyl sphingosine and triacetyl dihydrosphingosine do not give a m.p. depression in the mixture but form mixed crystals. The case is the same with trihexanoyl derivatives. Considering the Bloom rule the conclusion may be drawn that natural sphingosine is of a trans ethylenic configuration.

G. F.

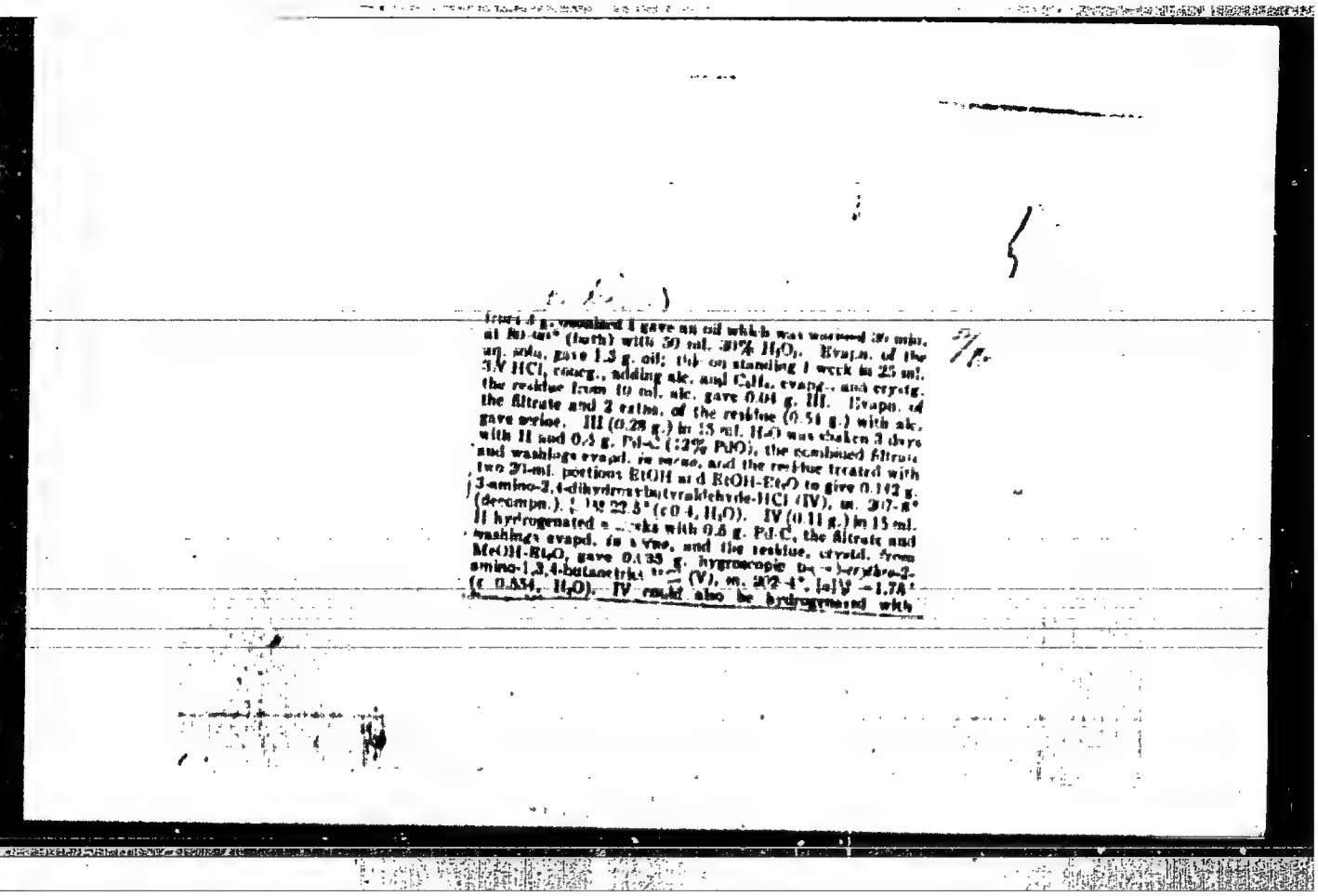
8-31-54

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Biological Chemistry

The structure of brain sphingosine. József Kiss and Dezső Bánfi (Univ. Szeged, Hung.). *Magyar Kém. Folyóirat* 59, 233-4(1953); cf. *C.A.* 47, 8644h.—Natural sphingosine was converted by ozonolysis into α,γ-dihydroxy-β-aminobutyric lactone. The latter was then converted into threoninol or into a related compd. of known configuration. Aminotetrose was isolated in form of its dinitrophenyl osazone among the decompn. products of the ozonolysis of diacetylsphingosine. Aminotetronic acid obtained at the ozonolysis of triacetylsphingosine was sepd. in a cryst. form as its well defined lactone-HCl. István Fináy

HUNG.

Sphingosine and sphingolipides. XII. Correlation of the configuration of natural sphingosine with that of erythro-2-amino-3,4-dihydroxybutyric acid. [illegible] and [illegible] (Univ. Szeged, Hung.). [illegible] 47, 1171 [illegible] (in German); cf. [illegible] 49, [illegible]. [illegible]sphingosine (I), 5 g. in [illegible] ml. [illegible] $CHCl_3$, was treated [illegible] min. with 5% ozone. The $CHCl_3$-sol. ozonide (oil) was heated [illegible] 100°) with [illegible] ml. H_2O, then cooled [illegible] and the H_2O was decanted. The dried (evaporation with $CaCl_2$) residue ([illegible] g.), crystd. from petr. ether, gave 0.42 g. myristic acid (II), m. 53 [illegible]. The petr. ether soln. gave a residue yielding 0.7 g. myristaldehyde 2,4-dinitrophenylhydrazone, m. 10[illegible] 7° (from EtOH). Ozonolysis of 6 g. I (contg. fat-sol. material) gave a product which treated in 30 ml. alc. with 4.5 ml. 2N NaOH and 3.7 g. S-benzylisothiouronium chloride in 50 ml. alc. added gave 2.5 g. of the salt of II, m. 1[illegible]° (from EtOH). The H_2O-sol. ozonolysis product was decolorized with C and evapd. in vacuo to give 2.52 g. residue; this in 15 ml. dioxane mixed with 8 ml. EtSH and 6 ml. [illegible] HCl in dioxane and shaken 4.5 days in a bomb tube, gave 2.30 g. crude product, which in turn gave 0.143 g. 2-amino-3-hydroxybutyrolactone.HCl (III), m. 219-21° (decompn.), $[\alpha]_D^{[illegible]}$ 47.2° (c 0.554, H_2O). Evapg. the $CHCl_3$



from 4 g. remained 1 gave an oil which was warmed 30 min. at 80-90° (bath) with 50 ml. 30% H_2O_2. Evapn. of the aq. soln. gave 1.5 g. oil; this on standing 1 week in 25 ml. 3.5 N HCl, concg., adding alc. and C_6H_6, evapg., and crystg. the residue from 10 ml. alc. gave 0.04 g. III. Evapn. of the filtrate and 2 extns. of the residue (0.51 g.) with alc. gave prisms. III (0.28 g.) in 15 ml. H_2O was shaken 3 days with II and 0.5 g. Pd-C (12% PdO), the combined filtrate and washings evapd. in vacuo, and the residue treated with two 20-ml. portions EtOH and EtOH-Et_2O to give 0.102 g. 3-amino-2,4-dihydroxybutyraldehyde-HCl (IV), m. 207-8° (decompn.), $[\alpha]_D^{20}$ 22.5° (c 0.4, H_2O). IV (0.11 g.) in 15 ml. II hydrogenated [illegible] hrs with 0.5 g. Pd-C, the filtrate and washings evapd. in vacuo, and the residue, crystd. from MeOH-Et_2O, gave 0.135 g. hygroscopic DL-erythro-2-amino-1,3,4-butanetriol (V), m. 202-4°, $[\alpha]_D^{20}$ −1.78° (c 0.854, H_2O). IV could also be hydrogenated with

Raney Ni at 120 atm. and 80°. D-*threo*-2-Benzamido-3,4-dihydroxy-γ-butyrolactone (2 g.) and 10 ml. SOCl$_2$ gave 1-(+)-*erythro*-2-amino-3-hydroxy-γ-butyrolactone·HCl (VI) by the method of Hassel and Painter (*C. A.* 48, [illegible]). A by-product (0.8 g.), m. 190–1° (from abs. EtOH), is prob. 2-benzamido-4-chloro-4-hydroxy-γ-butyrolactone (VII), $[\alpha]_D^{25}$ −130° (*c* 0.8, EtOH). An aq. suspension of 1.2 g. VII treated with 10 ml. *N* NaOH gave 0.7 g. 2-phenyl-5-hydroxymethyl-4-carboxyoxazole lactone (VIII), m. 159–61° (from 1:1 EtOH-petr. ether). Heating (100–5°) 2-phenyl-5-hydroxymethyl-4-carboxyoxazoline lactone·HCl also gave VIII. VIII was optically inactive and could not be hydrogenated at 100 atm. with Raney Ni. VI (2.5 g.) (H. and P., *loc. cit.*) in 150 ml. H$_2$O with 15 g. Raney Ni hydrogenated 12 hrs. at 80° and 120 atm., 0.1 g. Mg powder added, hydrogenation continued 4 hrs. at 100–3° and 130 atm. (when the Fehling test was neg.), the combined filtrate and washings concd. *in vacuo* and evapd. with abs. C$_2$H$_5$OH, and the residue (2.1 g.) crystd. from MeOH-Et$_2$O gave 1-(+)-*erythro*-2-amino-1,3,4-butanetriol·HCl (IX), m. 201–3° (foaming), $[\alpha]_D^{25}$ 1.67° (*c* 3, H$_2$O). IX is the antipode of V. Similar reduction of 2.8 g. of the D-isomer of VI (H. and P., *loc. cit.*) gave 0.8 g. V, $[\alpha]_D^{25}$ −1.61° (*c* 0.8, H$_2$O), m. 265° (decompn.), which did not depress the m. p. of V from I. Thus sphinganine is D-*erythro*-2-amino-1,3-dihydroxy-4-*trans*-octadecene. George H. Sutherland

Kiss, J.

/ Synthesis of chloramphenicol. G. Fodor, I. Tóth, K. Kovács, and [illegible] (Univ. Szeged, Hung.). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1955, 441-51; *Bull. Acad. Sci. U.S.S.R. Div. Chem. Sci.* 1955, 391-9(Engl. translation); cf. Fodor, *et al.*, *C.A.* 44, 7273g.—PhCH:CHCH$_2$OAc (90 g.) in 450 ml. PhMe added to 400 g. $NaNO_3$ in 450 ml. H_2O in a dark vessel, the stirred mixt. treated 7 hrs. at 0° with 1.4 l. 20% H_2SO_4 with occasional bubbling of CO_2 to break the foam, and the MePh layer filtered gave the crude product, which, washed with EtOH and EtOH-Et_2O, yielded 89 g. DL-*erythro*-PhCH(NO)CH(NO$_2$)CH$_2$OAc (I), m. 124°, discolored after several weeks' storage. I (50 g.) treated with stirring in 224 ml. Ac_2O at 25-9° over 10 min. under CO_2 with 24 g. concd. H_2SO_4 and 72 ml. Ac_2O, stirred 50 min. longer, dild. with 1 l. ice water, and kept 3-4 days in a refrigerator gave 60% DL-*three*-PhCH(OAc)CH(NO$_2$)CH$_2$OAc (II), m. 72° (from EtOH). $(Cl_3CHCO)_2O$ in the above reaction similarly gave, after treatment of the quenched product with Na_2CO_3 and NaOAc, 46% DL-*three*-PhCH(O$_2$CCHCl$_2$)CH(NO$_2$)CH$_2$OAc (II), m. 74° (crude), m. 82° (from EtOH). I (84 g.) in 960 ml. Me_2CO treated over 10 min. with 1.156 l. *N* HCl, then refluxed 3.5 hrs., concd., treated with 130 g. $NaHCO_3$, extd. with Et_2O, and the ext. shaken with $KHSO_3$ gave 68.5% DL-*three*-PhCH(OH)CH(NO$_2$)CH$_2$OH, m. 82.5° (from Et_2O-petr. ether). Hydrogenation of I in AcOH over Pd-C at 40 atm. gave 40% DL-*three*-PhCH(OH)CH(NHAc)CH$_2$OAc (III), m. 108-9° (cf. U.S. 2,483,885, *C.A.* 45, 1425a), which (1 g.), kept 24 hrs. with 5 ml. quinoline and 1.5 g. Ac_2O, gave 1.1 g. DL-*three*-PhCH(OAc)CH(NHAc)CH$_2$OH, m. 79-80°. III refluxed 2 hrs. with 5% HCl gave 85% DL-*three*-PhCH(OH)CH(NH$_2$)CH$_2$OH.HCl, m. 192 (cf. U.S. 2,513,215, *C.A.* 45, 170a). I hydrogenated in AcOH-$(CO_2H)_2$ over Pd-C at atm. pressure gave 59.5% DL-*three*-PhCH(OH)CH(NH$_2$)CH$_2$OH *hemalate*, m. 139-40° (from EtOH), which yielded the *free base*, m. 82.5°. Electrolytic reduction of I in 100 ml. AcOH and 240 ml. 96% EtOH with a Hg pool electrode and 20% HNO_3 as electrolyte in a porous cup at 0.07 amp./sq. cm. and 44-5°, the catholyte being acidified with HCl, gave in 2 hrs., from 14 g. I, 2.4 g. DL-*three*-PhCH(OH)CH(NHAc)CH$_2$OAc, m. 169-70° (from AcOH). II similarly treated in aq. HCl at 35-7° gave 28% Cl-free product, m. 166°. PhCH(OH)-CH(NH$_2$)CH$_2$OH (15.7 g.) in 160 ml. H_2O and 200 ml. EtOAc treated with stirring in 50 min. with 30 ml. 40% NaOH at 30°, with the pH kept at 6-8, the aq. phase extd. with EtOAc, the combined org. solns. evapd., and the residue treated with abs. EtOH-HCl gave 50.5% DL-*three*-PhCH(OH)CH(NH$_2$)CH$_2$OAc.HCl, m. 178°, which with K_2CO_3 gave the *free base*, m. 136.5°, identified as DL-*three*-PhCH(OH)CH(NHAc)CH$_2$OH. Cl_3CHCH_2Me hemal of EtOAc in the above gave 64.8% DL-*three*-PhCH(O$_2$CCH-Cl$_2$)CH(NH$_2$)CH$_2$OH.HCl, m. 185°. The latter (15.75 g.) treated with 45 ml. H_2O and 90 ml. EtOAc, then at 25° with 3.45 g. K_2CO_3, stirred 5 min., and extd. with EtOAc gave 78% DL-*three*-PhCH(OH)CH(NHCOCHCl$_2$)CH$_2$OH (IIIA), m. 94-5° (from 50% EtOH), which stirred with pyridine-Ac_2O 0.5 hr. at 100°, yielded 83% DL-*three*-PhCH(OAc)CH(NHCOCHCl$_2$)CH$_2$OAc (IIIB), m. 93.5° (from 60% EtOH); IIIA kept 15 min. at 70° with Ac_2O gave 75% DL-*three*-PhCH(OH)CH(NHCOCHCl$_2$)CH$_2$OAc (IV), m. 100-1° (from EtOAc-petr. ether), which with abs. Et_2O-EtOH-HCl at 0° yielded in 24 hrs. 74% DL-*three* PhCH-(O$_2$CCHCl$_2$)CH(NH$_2$)CH$_2$OAc.HCl (IVA), m. 187° (from EtOH-Et_2O). IV (3.2 g.) in 10 ml. dioxane treated with 5 ml. dil. nitric contg. 0.91 g. HNO_3 at 0° and kept several days at 0° gave 75.5% *HNO$_3$ analog* (IVB) of IVA, $C_{11}H_{12}N_2Cl_6$.

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Stereochemical and synthetic studies in the sphingosine field. IX. Ozonolysis of natural sphingosine. J. Kiss, G. Fodor, and D. Bánó (Univ. Szeged). *Acta Chim. Acad. Sci. Hung.* 5, 341-8 (1955) (in English). *C.A.* 49, 4531e. — To correct a literature discrepancy (Klenk and Diebold, *C.A.* 25, 4278; Niemann and Nichols, *C.A.* 36, 3784[9]), the ozonolysis of sphingosine (I) and its derivs. was re-investigated. The crude sulfate of I (87 g.), obtained by the acid hydrolysis of sphingolipides from the brain and spinal cord of cattle according to Carter, *et al.* (*C.A.* 41, 6221g), suspended in 1 l. 0.5*N* NaOH, extd. 3 times with 1 l. ether, the solid residue from the evapn. of the combined ether exts. dissolved in 120 ml. dry C_5H_5N, treated at 0° with 120 ml. Ac_2O, and heated 15 min. yielded, after standing a day in the cold, 70.3 g. tri-Ac deriv. (II) of I, m. 102-4°, $[\alpha]_D^{25}$ −0.7° (c 1.1, $CHCl_3$). Alk. hydrolysis of II gave crude I, m. 69-78°, which (1.1 g.) was recrystd. to yield 1.1 g. II, identical with the preceding sample. Thus, no Walden inversion had occurred during the prepn. of II from lipides by their acid hydrolysis, followed by the alk. hydrolysis of II (cf. Jenny and Grob, *C.A.* 49, 6370e). Partial alk. hydrolysis of 6.4 g. II in 240 ml. MeOH by letting it stand 12 hrs. at 18° with 40 ml. *N* KOH in MeOH, evapg. the mixt. to 100-20 ml. at 30°, adding 200 ml. H_2O, and extg. with ether yielded from the ether ext. 3 g. *N*-Ac deriv. (III) of I, m. 80-5°, $[\alpha]_D^{25}$ −5.5° (c 2, $CHCl_3$); mixed m.p. with the dihydro deriv. of III, 62-111°. The mother liquor from the prepn. of pure II freed from the solvent in vacuo and the residue dissolved in $CHCl_3$ and neutralized gave an oil, b$_{0.05}$ 170-80° (bath temp.), $[\alpha]_D^{25}$ −6° (c 2, $CHCl_3$), probably $C_{11}H_{23}CH{:}CHCH(OR')$-$CH(NHR)CH_2OR'$ (R = R' = Ac, R'' = Me). I (1.3 g.) from the alk. hydrolysis of 2 g. II in 10 ml. dry C_5H_5N treated with 4 g. *p*-$O_2NC_6H_4COCl$, heated 15 min. on a steam bath, allowed to stand 1 day at room temp., 20 ml. H_2O added, and the mixt. extd. with $CHCl_3$ yielded 1.16 g. tris(*p*-nitrobenzoyl) deriv. (IV) of I, m. 136-9° (from 90% Me_2CO-H_2O). Similar treatment of 2 g. dihydrosphingosine (V) gave 2.5 g. tris(*p*-nitrobenzoyl) deriv. (VI) of V, m. 144-5° (from abs. EtOH); mixed m.p. with IV, 138-42°. Alk. hydrolysis of VI gave the *N*-*p*-O_2N-C_6H_4CO deriv. (VII) of V, m. 124-8° (from dil. EtOH). The stability and crystn. properties of IV, VI, and VII

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were not appropriate for ozonolysis, and only I and II were used. O_3 (5%) bubbled through 6 g. II in 100 ml. $CHCl_3$ 1.5 hrs. at room temp. pptd. the ozonide, and evapd. the $CHCl_3$ in vacuo, shaking the residue 8½ min. with 100 ml. H_2O, and cooling in ice yielded 4 g. H_2O-insol. oil (VIII), sepd. by petr. ether into (I) 0.6 g. petr. ether-sol. myristic acid, m. and mixed m.p. 51–2° (S-benzylisothiuronium salt, m. 138° (cf. Donleavy, *C.A.* **30**, 5192²), and (I) glacial AcOH-sol. myristaldehyde (IX), which reduced Fehling soln. and yielded 0.7 g. 2,4-dinitrophenylhydrazone (X) of IX, m. 104.5° (from EtOH). The aq. layer sepd. from VIII also reduced Fehling soln., and after evapn. of the solvent, the residual (3.29 g.) syrup was acetylated to 0.52 g. $AcOCH_2CH(NHAc)CH(OAc)CHO$, noncryst., but characterized by its compd. with 2,4-$(O_2N)_2C_6H_3NHNH_2$, probably the osazone of $AcOCH_2CH(NHAc)COCHO$, m. 175–8° (decompn. softening at 160°). Also from the combined aq. mother liquors of the preceding ozonolysis products, acidified, evapd. to dryness, and the residue extd. with hot abs. EtOH, was obtained 0.3 g. *3-amino-2-hydroxy-4-butyrolactone HCl salt*, m. 218–20°, $[\alpha]_D$ 47.2° (c 0.554, H_2O), which fails to give ninhydrin and Fehling soln. tests. Similar ozonolysis of I gave no isolatable products except X. The splitting at the double bond was attempted also through the epoxide: 5.1 g. II in 12 ml. $CHCl_3$ treated with 0.35 g. $Bz_2O_2H_2$ in 51 ml. $CHCl_3$, allowed to stand 2 days at 0°, and evapd. in vacuo gave a yellow oil, whose ether-insol. portion yielded 1.65 g. epoxide (XI) of II, m. 134–6° (from Me_2CO), $[\alpha]_D$ 16.8° (c 0.6, $CHCl_3$) (*C.A.* **47**, 8644h). Hydrolysis of 0.6 g. XI by heating 6 hrs. at 120–30° in a sealed tube with 10 ml. H_2O gave a tri-Ac deriv. of an amino tetrol, but periodic oxidation failed, probably because of the migration of an Ac group so that no vicinal OH groups remained. X. **Preparation of several long-chain aliphatic ketones.** I. Sallay. *Ibid.* 349–58 (in German and English summary). As a step toward complete synthesis of sphingosine, the key compd., *n*-$C_{11}H_{23}CH_2CHAc$ (I), was prepd. after preliminary expts. on model compds. *n*-$C_{11}H_{23}OH$ (54.8 g.) warmed 7 hrs. on a steam bath with 20.7 g. $POCl_3$ according to Plimmer and Burch (*C.A.* **23**, 4417), gave 6.6 g. crude $C_{11}H_{23}OPOH_2$ (II), m. 73–83° (sample recrystd. from $CHCl_3$). Distn. and reflux. of 200 g. II in vacuo gave the fractions (g., b.p., n_D^{25}): 136.8, b_4 147–70°, —; 15, b_{14} 140–53°, 1.4424; 76, b_{14} 155–7°, 1.4437 (III); 50, b_{14} 156–7°, 1.4445. Ozonolysis of III according to Asinger and Rökoldt (*C.A.* **38**, 57⁹) yielded 8.2 g. mixed acids, sepd. by vacuum distn. into 0.6 g. lauric, b_{14} 90–172°, and 5.1 g. myristic acid, m. 34–40°, characterized by their S-benzylisothiuronium salts, m. 140–1° and 139°, resp. A shift of the double bond had obviously occurred during the thermal

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decompn. of II. The desired pure 1-C_6H_{12} (IV) was prepd. from $C_6H_{11}O_2CC_6H_{11}$ (V) according to Waterman, *et al.* (*C.A.* 24, 823) by heating 1306 g. V under N 4 hrs. from b_{760} 190° to b_{760} 300° giving 951 g. distillate (332 g. $C_6H_{11}CO_2H$ as residue). The oily distillate in 1 l. petr. ether (b. 30-50°) washed with 3% NaOH and then EtOH, dried, treated with Na wire, refluxed 5 hrs., filtered, neutralized, and dried again gave 448 g. crude IV, fractionally distd. in vacuo to yield 246 g. pure IV, b_{760} 153-7°, n_D^{20} 1.4415. Ozonolysis of 10 g. IV yielded the expected $C_5H_{10}CHO$ [illegible] m. 23.5° (from EtOH); 2,4-dinitrophenylhydrazone, m. 102.3° (cf. Lunde, *C.A.* 20, 362). IV [illegible] in [illegible] CS_2 and [illegible] AcCl in 20 ml. CS_2 at [illegible] with rapid stirring [illegible] decompn. and purification [illegible] $H_{10}CH:CHAc$ (VI) [illegible] 7.0%) pure VI [illegible] (from EtOH). This [illegible] method for analogs of VI [illegible] (VII) with [illegible] acid chlorides previously used for the synthesis of [illegible] ketones (Gilman and Nelson, *C.A.* 30, 5951[9]). As preliminary model expts., 0.1 mole VII prepd. according to Cason (*C.A.* 41, 397g), in dry C_6H_6 was treated with ice cooling during 10 min. with 0.1 mole $C_6H_{11}COCl$ (VIII) in 20 ml. dry C_6H_6, and the mixt. refluxed 1 hr., cooled to 0°, and poured onto 200 ml. 10% ice-cold H_2SO_4; from the C_6H_6 layer was obtained 75% $C_6H_{11}Ac$, m. 53.5° (semicarbazone, m. 110°). Similar treatment of $C_6H_{11}COCl$ in place of VIII yielded 70% $C_6H_{11}Ac$ (IX), m. 46.8°; semicarbazone (X), m. 121-2°. These good yields encouraged the use of VII in the prepn. of the desired I. $C_6H_{10}CH:CHCO_2H$ was prepd. according to Myers (*C.A.* 46, 1639g), and its acid chloride (XI), m. 166-8°, with $SOCl_2$ in the usual way. Treatment of 0.1 mole XI with 0.1 mole VII as above yielded 80% crude and 60% pure I, b_{15} 156-60°, n_D^{20} 1.4550 (semicarbazone, m. 110-12°, mixed m.p. with X, 118-20°; taken as evidence for a *trans*-ethylene configuration in I; cf. Fodor and Kiss, *C.A.* 44, 4252e). Ozonolysis of I followed by H_2O_2 oxidation, gave 80% myristic acid, and reduction of I by Pd-C gave IX, both results being confirmations of the structure of I. The attempted condensation of I with Et_2CO_3 in the presence of NaH (cf. Soloway and La Forge, *C.A.* 42, 1914a) gave [illegible] C_6H_{11} with perhaps a small [illegible] $H_{10}CH:CHCOCH_2CO_2Et$; this reaction will be [illegible] investigated. XIII. Preparation of DL-threo-2-[illegible] 1,3-diacetoxyoctadecene. J. Sallay and P. [illegible] (in English); cf. *C.A.* 49, 9646c.— The previously reported synthesis (*C.A.* 49, 7896?) of [illegible] $C_{13}H_{27}CH:CHCH(OH)CH(NHAc)CH_2OH$ (I) is modified by the use of the Japp-Klingemann reaction (Ann. 247, 210 [1888]) on Et palmitoylacetate (III). Fused $C_{15}H_{31}CO_2H$, treated with $SOCl_2$ according to Ralston and Selby (*C.A.* 33, 5358?), yielded 70% pure $C_{15}H_{31}COCl$ (II), $b_{2.0}$ 157-2.80°. Adding 55.2 g. [illegible] in 400 ml. ether dropwise to 9.36 g. powd. Na in 100 ml. ether, stirring, refluxing 2 addnl. hrs., adding dropwise 97.70 g. III to the ice-cold mixt., refluxing 1 hr., and pouring into 150 ml. 10%

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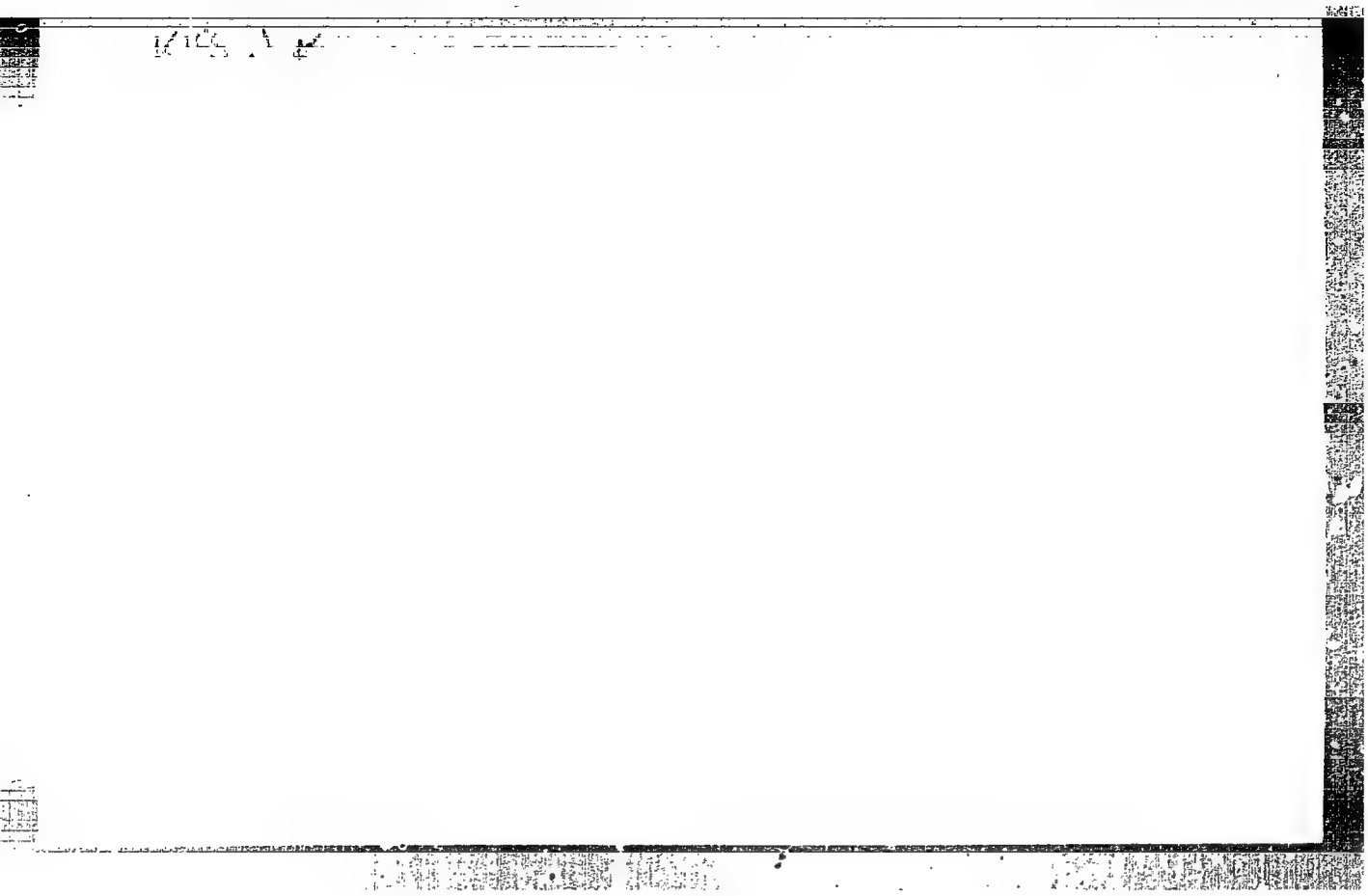
HCl yielded from the ether layer 120.1 g. (90%) II, b. — 175° (cf. Viscontini and Merckling, *C.A.* 47, 12252e). p-$O_2NC_6H_4N_2Cl$ (from 2.07 g. p-$O_2NC_6H_4NH_2$) in 10 ml. ice-cooled H_2O added to 7.30 g. II in 12 ml. EtOH and 0.46 g. Na in 15 ml. EtOH and the resulting emulsion stirred 30 min. at room temp. yielded from the ether ext. 1.0 g. (10.0%) p-$O_2NC_6H_4NHN{:}C(CO_2Et)COC_{11}H_{23}$ (IV), m. 73-4° (from EtOH). On hydrogenation over Pd-C in 25 ml. abs. EtOH acidified with 2.4 ml. 20.7% HCl in dry ether, 1.45 g. IV absorbed 220 ml. H (theoretical, 224 ml.) to yield inactive $C_{11}H_{23}COCH(CO_2Et)NH_3Cl$ (V), m. and resolidified m.p. 114-16° (from AcOEt) (yield not given). Previously reported procedures (*loc. cit.*) changed V by means of Ac_2O and AcOAg to 67% inactive $C_{11}H_{23}COCH(CO_2Et)NHAc$, m. 71-3° (2,4-dinitrophenylhydrazone, m. 105-7°), and thence by means of $LiBH_4$ (Kollonitsch, *et al.*, *C.A.* 49, 2295d) to 90% mixed *threo*- and *erythro*-racemates of I, m. 90-107°, sepd. by fractional crystn. of the tri-Ac derivs. (VI). The mixed racemates (1.815 g.) in 60 ml. dry C_5H_5N and 6.3 ml. Ac_2O kept 48 hrs. at 20°, evapd. *in vacuo* at 40°, and the residue taken up in ether yielded 2.06 g. (91%) crude VI, m. 50-70°. Fractional recrystn. from petr. ether (b. 25-40°) sepd. 2 compds., m. 80-2° and 66-8°, resp. [cf. for the *threo*-racemate of I, m. 67-8° and 65-6°, found by Grob, *et al.* (*C.A.* 46, 6590a), and Carter, *et al.* (*C.A.* 48, 9037g), resp.]. **XIV. Structure of sphingoglycosides.** J. Kiss and I. Jurcsik. *Ibid.* 477-80 (in English).—A preliminary communication. The only unsolved structural problem for the 3 sphingoglycosides (I) is the question of α- or β-linkage of the galactose. Cerebron, kerasin, and nervon were separately hydrolyzed and $[\alpha]_D$ values detd. for the liberated sugars, together with those for the hydrolysis product of α-Et galactoside. Curves for $[\alpha]_D$ values vs. time are similar for all 4 sugars, and the α-linkage is therefore probable for all. This conclusion is confirmed by the slow (72 hrs.) rate of mercaptolysis at room temp. of I (cf. Lemieux, *C.A.* 48, 1346) and by enzymic tests. Exptl. details are to be reported later.

H. S. French



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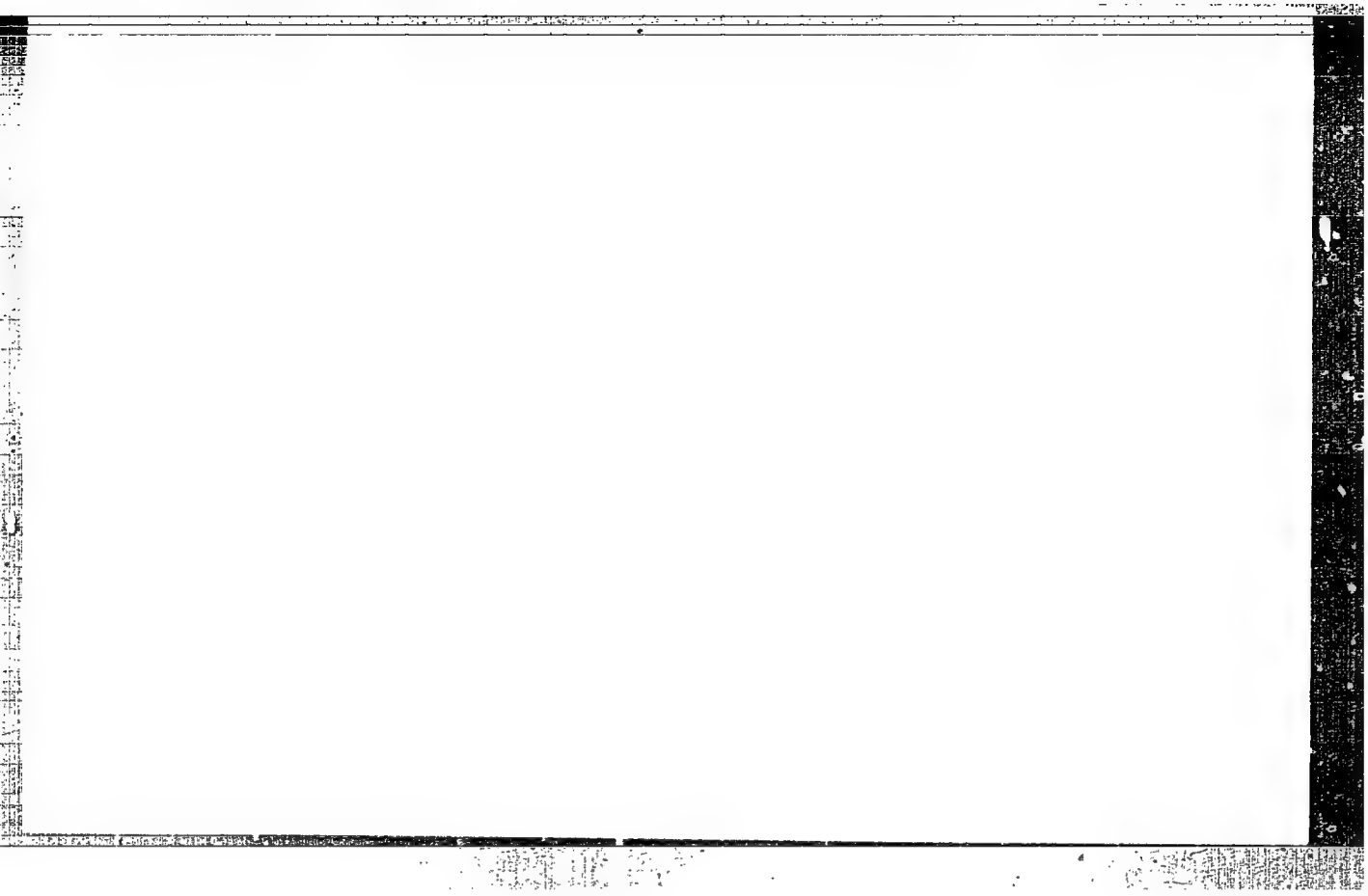

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H. S., C.

Jarcsik, I. Stereochemical and synthetic studies in the sphingolipid field. Pt. II. The structure of sphingoglycosides. In English. p. 477.
ACTA CHIMICA, Budapest, Vol. 5, no. 3/4, 1955.

NY: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 12, Oct. 1955, Uncl.

KISS J.

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ABS. JOUR.	: RZKhim., No. 21 1959, No.	75091
AUTHOR	: Kiss, J. and Sirokman, F.	
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TITLE	: Stereospecific Synthesis of Erythro-2-amino-1, 3,4-trihydroxybutane	
ORIG. PUB.	: Chimia, 13, No 4, 114 (1959)	

ABSTRACT : The structure of natural sphingosine has been confirmed by the synthesis of D-erythro-2-amino-1,3,4-trihydroxybutane (D-I). The trans-dibenzyl ester (DBE) of 2,3-epoxy-1,4-butanediol was prepared from trans-1,4-dibromo-2-butene and $C_6S_5CH_2ONa$ via the trans-DBE of 2-butene-1,4-diol. Amination of the latter product gives the DBE of I, mp 61-63°, which is cleaved into the antipodes of L-glutamic acid. The glutamate of the DBE of I, mp 186°, is debenzylated to give D-I.

CARD: 1/2

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24.7100 (1043)

AUTHOR: Kiss, József

TITLE: The Structure of Real Crystals - II. Color Centers in Alkali Halide Crystals

PERIODICAL: Fizikai Szemle, 1960, Vol. 10, No. 10, pp. 309-315

TEXT: Introduction: The examination of the so-called color centers obtained in alkali halides by cathode-ray bombardment gives much information on the structure of these compounds and on their bonds. I. Color centers: 1) Coloring methods: Besides by cathodic irradiation, crystals can be colored additively (by heat treatment or electrolysis) or photochemically. Z. Gyulai and co-workers (Ref. 1) produced coloring by pressure and subsequent heat treatment. 2) F-band: In the visible spectrum of crystals treated by methods under 1), a characteristic absorption band appears so named by Pohl. A general formula for it was given by M. F. Deygen (Ref.3). F-centers are irregularities produced in the course of coloring, and can be destroyed by photochemical or heat treatment. 3) Features of crystals containing F-centers: a) photoconduction; b) development of the F'-band

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The Structure of Real Crystals - II. Color Centers in Alkali Halide Crystals

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overlapping the F-band. The F'-center behaves like a singly-charged negative ion. The F-center is thus neutral. 4) Lattice defects: As against "ideal crystals", real crystals present defects or irregularities such as: a) ion or electron defect or excess; b) structural defects (dislocations, block boundaries etc); c) chemical deficiencies (outer atoms or ions). Electric defects are of basic importance. In a neutral crystal, the Coulomb space can develop: a) as the so-called Frenkel' defect; b) as the Schottky defect; c) as self-capture, so named by L. Landau (Ref. 7). F-centers appear to be electrons captured in a thermodynamically developed negative ion defect. 5) Determination of the F-center concentration: The different (optical, density, and chemical) measurement methods show good agreement and confirm previous ideas. 6) The mechanism of development of color centers: In photochemical coloring, ionizing radiation releases photoelectrons; this is the primary effect of radiation. In the crystal, every temperature is associated with a positive and a negative ion defect. These combine to nodes for energetic reasons.
II. The characteristic absorption of alkali halide crystals: 1) Exciton bands: In the case of alkali halides, excitons may be considered as excited halide ions; they behave like particles possessing mobility and

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The Structure of Real Crystals - II. Color Centers in Alkali Halide Crystals

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B009/B057

effective mass. 2) α- and the β-bands: These may be regarded as belonging to the fundamental absorption band and develop on the long-wave side of the latter. III. Aggregates of F-centers: 1) The R'-band: This is produced by reduction of the F-band by heat treatment. 2) The R_1-, R_2-, M- and N-centers and their absorption bands: Scott and, later, Petroff (Ref. 17) observed the build-up of several well-defined bands instead of the R'-band, if the irradiated crystal is cooled. IV. Colloid bands: M. Savostyanova (Ref. 24) examined absorption bands in NaCl, produced by Na-colloids. The color-center problem covers a wide range: V-bands in the ultraviolet region, Z- and U-bands in the visible spectrum are not treated in this paper. There are 8 figures and 24 references: 3 Soviet, 9 German, 9 US, 2 British, 1 Dutch, 1 Japanese, and 1 Hungarian.

ASSOCIATION: Építőipari és Közlekedési Egyetem Kisérleti Fizikai Intézete
(Laboratory of Experimental Physics, University of the Building Industry and Communications)

Card 3/3

KISS, Jozsef, bronzermes ujito; KONNER, Janos

One out of ten thousand; Jozsef Kiss, bronze medal winning innovator. Munka 11 no.6:28 Je '61.

1. Hidepito Vallalat epitesvezetoje (for Kiss). 2. "Magyar Radio" rovatveztoje (for Konner).

KISS, Jozsef, dr.

Experiences with a simple method of manometric cholangiography during surgery. Orv. hetil. 103 no.45:2136-2138 11 N '62.

1. Szegedi Orvostudomanyi Egyetem, I. Sebeszeti Klinika.
(CHOLANGIOGRAPHY) (MANOMETRY)

KISS, Jozsef

Hair salt. Fiz szemle 14 no.7:206-208 Jl '64.

1. Research Group of Crystal Growth, Hungarian Academy of Sciences, Budapest.

AUTHOR: Kiss, Josef

B

[illegible] rock-salt crystals of needle-like [illegible] (Haarsalz)

[illegible] crystal structure, [illegible]

[illegible]

[illegible] ment of an organized defense against the disease. [illegible]

KISS, JOZSEF

11 G

a

PROCESSES AND PROPERTIES INDEX

Immunization experiments with antigens of different groups. I. Béla Rex-Kiss and József Kiss (Székesfővárosi Közegészségügyi Intézet, Budapest, Hung.) (Orvosi Lapja Népegészségügy 3, 418-10(1947).—Intramuscular injections of blood of a group different from that of the subject and of saliva as immunizing agents increased the isohemagglutinin and the isohemolysin contents. In the serum of persons treated a specific antibody is formed which pptd. the homologous antigen in saliva. 14 references. István Finály

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TURAJ, Pal, dr.; KISS, Julia, dr.; SZORADY, Istvan, dr.

On the clinical significance of ceruloplasmin. Orv. hetil. 105 no.33:1545-1550 16 Ag '64.

1. Szegedi Orvostudomanyi Egyetem, Gyermekklinika (Igazgato: Bela Domokos dr.).

KISS, K.

Professional agricultural circles. p. 24. (Magyar Mezogazdasag, Vol. 11, no. 2, Jan. 1956 Budapest)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

TIGYI, A.; MIRISZLAI, E.; KISS, K.; LISSAK, K.

Significance of vagal afferentation in the regulation of diencephalic vegetative reactions. Acta physiol.hung. 17 no.4:401-406 '60.

1. Institute of Physiology, Medical University, Pecs.
(VAGUS NERVE physiol)
(DIENCEPHALON physiol)

HUNGARY

BOHENSZKY, Gyorgy, Dr, BOKOR, Zsuzsa, Dr, KUSTOS, Gyula, Dr, KISS, Kornelia, Dr; Medical University of Pecs, I. Medical Clinic (Pecsi Orvostudomanyi Egyetem, I. Belklinika).

"The Significance of Phonocardiograms Obtained from a Lead Through the Esophagus."

Budapest, Orvosi Hetilap, Vol 104, No 18, 5 May 63, pages 829-831.

Abstract: [Authors' Hungarian summary] The authors discuss the performance of the Bohenszky-Zdelenyi esophageal microphone probe. The sound effects obtained from the dorsal surface of the heart are valuable in the diagnosis of mitral abnormalities. 5 Western, 3 Eastern European references.

1/1

KISS, K.

"The Pneumatic Transportation of Cement" p. 330 (Epitoanyag, Vol. 5, No. 10, October, 1953, Budapest)

SO: East European Accessions, Vol. 3, No. 3, March 1954, Unclassified.

KISS, K.

Hungary /Chemical Technology. Chemical Products and Their Application I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31679

Author : Kiss Karoly

Title : Asbestos and Its Uses

Orig Pub: Epitoanyag, 1955, 7, No 3, 102-109

Abstract: Detailed description of the mechanical, chemical and thermal characteristics of different varieties of asbestos. The deposits and the utilization methods are described. Results of experiments on preparation of synthetic asbestos are cited.

Card 1/1

KISS, K.

KISS, K. Production of asbestos cement and problems of its quality. p. 107

Vol. 49, no. 6, June 1956
EPITOANYAG
Budapest, Hungary

SO: East European Accession Vol. 6, no. 3, March 1957

KISS, K.;EGERSZEGI, P.

Investigation of the ruptured structure of the coal basin in Oroszlany by geophysical methods. p. 681.

BANYASZATI LAPOK. (Magyar Banaszati es Kohaszati Egyesulet) Budapest, Hungary. Vol. 14, no. 10, Oct. 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 26, no. 1/2, 1959. Uncl.

KISS, Karoly

Technical development problems of the Szolnok-Bekescsaba-Lokoshaza main line. Vasut 14 no.11:14-15 N '64.

1. Deputy Head, Directorate of the Hungarian State Railways, Szeged.

KISS, Karoly

Preparation of the 1961 production plans. Munka 10 no.12:8 D '60.

1. Szakszervezetek Orszagos Tanacsa szervezesi osztalyanak helyettes vezetoje.

CSANADI, Gyorgy, dr.,egyetemi tanar; FASKERTI, Sandor; SZABO, Dezso, dr., a kozlekedestudomanyok kandidatusa, okl.mernok; CSUHAY, Denes; TAKACS, Endre; CSABAI, Rudolf; NAGY, Rudolf; KUTAS, Laszlo,mernok; VASARHELYI, Boldizsar, dr.,a muszaki tudomanyok doktora, tanszek-vezeto egyetemi tanar; KOLLER, Sandor, muegyetemi adjunktus; KALMOKI [redacted], Sandor; GYOMBER, Sandor; TALLO, Gyula;KOZARY, Istvan; SZILAGYI, Lajos; HEGYI, Kalman,okl.mernok; BERCZIK, Andras; MARKI, Laszlo; PALFI, [redacted], Endre; NAGY, Endre,okl.mernok; SZATMARY, Ferenc; MAGORI, Judit; CSIKHELYI, Bela; MESZLERI, Zoltan; VEROSZTA, Imre; ZSIGA, Sandor; TOROK, Istvan; KOMCZ, Laszlo; WESSELY, Ferencne; SZABO, Bela; KOMOROCZI, Lajos; GINTL, Jozsef; CSONTOS, Dezso; JAKAB, Sandor; LOVASZ, Istvan, mernok; KISS, Karoly; [redacted], Karoly

The City Transportation Conference in Szeged. Kozl tud ss 12 no.2: 49-54 F '62.

1. Akademiai leveleso tag, a kozlekedes- es postaugyi miniszter elso helyettese, es "Kozlekedestudomanyi Szemle" szerkeszto bizottsagi tagja (for Csanadi) 2. Kozlekedes- es Postaugyi Miniszterium Muszaki Felugyeleti Osztalyanak vezetoje (for Faskerti) 3. Fovarosi Tanacs Vegrehajto Bizottsaga VIII. Varosrendezesi es Epiteszeti Osztalyanak munkatarsa, es "Kozlekedestudomanyi Szemle" szerkeszto bizottsagi tagja (for Szabo)

(Continued on next card)

[redacted], Gyorgy --- (Continued) Card 2.
4. Fomernok, Kozlekedes- es Postaugyi Miniszterium Kozlekedespolitikai Osztalyanak munkatarsa (for Csuhay) 5. Kozlekedes- es Postaugyi Miniszterium Autokozlekedesi Vezerigazgatosaganak szakosztalyvezetoje (for Takacs) 6. MAV fointezo, a Kozlekedestudomanyi Egyesulet miskolci teruleti szervezetenek titkara (for Csabai) 7. Fomernok, a Fovarosi Tanacs Vegrehajto Bizottsaga Kozlekedesi Igazgatosaga helyettes vezetoje (for Nagy) 8. Fovarosi Tanacs Vegrehajto Bizottsaga Kozlekedesi Igazgatosaganak fejlesztesi eloadoja (for Kutas) 9. "Kozlekedestudomanyi Szemle" szerkeszto bizottsagi tagja (for Vasarhelyi) 10. Csoportvezeto fomernok, Debrecen m.j. Varosi Tanacs Vegrehajto Bizottsaga Ipari es Kozlekedesi Osztaly (for Kalnoki Kiss) 11. Rendorornagy, Csongrad Megyei Rendorfokapitanysag Kozrendvedelmi Osztalya (for Gyomber) 12. Fomernok, Miskolc m.j. Varosi Tanacs Vegrehajto Bizottsaga Epitesi es Kozlekedesi Osztaly (for Tallo) 13. Fomernok, Kozlekedes-es Postaugyi Miniszterium Utosztalya (for Kozary) 14. Favorosi Tanacs Vegrehajto Bizottsaga VIII. Varosrendezesi es Epitesuti Osztalyanak vezetoje (for Szilagyi) 15. Ut-Vasutterveso [redacted] Kozlekedesi Osztalya vezetoje (for Hegyi) 16. BUVATI Kozlekedesi es Kommunszakosztalyanak vezetoje, Budapest (for Berczik) 17. Pecs m.j. varos Tanacsa BV Epitesi es Kozlekedesi Osztalyanak vezetoje (for Marki)

(Continued on next card)

CSANADI, Gyorgy --- (Continued) Card 3.

18. Szeged m.j. Varosi Tanacs Epitesi es Kozlekedesi Osztalyanak fomernoke (for Palfi Budinszki) 19. Budapest Fovarosi Tanacs Melyepitesi Tervezo Vallalat iranyito tervezoje (for Endre Nagy) 20. Debreceni Kozlekedesi Vallalat igazgatoja (for Szatmary) 21. Budapest Fovarosi Tanacs Melyepitesi Tervezo Vallalat tervezomernoke (for Nagori) 22. Budapest Fovarosi Tanacs Melyepitesi Tervezo Vallalat tervezomernoke (for Csikhelyi) 23. Miskolci Kozlekedesi Vallalat fomernoke (for Meszleri) 24. Kozlekedes- es Postaugyi Miniszterium Autokozlekedesi Foosztalyanak fomernoke (for Verosata) 25. Szegedi Kozlekedesi Vallalat fomernoke (for Zsiga) 26. Miskolci Kozlekedesi Vallalat fokonyveloje (for Torok) 27. Debreceni Kozlekedesi Vallalat fomernoke (for Konez) 28. Penzugyminiszterium fosegedoja (for Wessely) 29. Pecsi Kozlekedesi Vallalat igazgatoja (for Szabo) 30. Epitesugyi Miniszterium Varosrendezesi Foosztalyanak mernoke (for Komorocsi) 31. Fovarosi Villamosvasut Fomernoke (for Gintl)

(Continued on next card)

CSANADI, Gyorgy --- (Continued) Card 4.

32. 51-es Autokozlekedesi Vallalat munkatarsa (for Csontos).
33. Ut-Vasuttervezo Vallalat irodavezeto fomernoke (for Jakab).
34. Budapesti Helyierdeku Vasutak osztalyvezetoje (for Lovasz).
35. Magyar Allamvasutak igazgatohelyettese (for Kiss, Karoly).
36. Magyar Allamvasutak vezerigazgathohelyettese (for Rodonyi).

KISS, Karolyne, dr.

Conference on the technical language at the Hungarian Academy of Sciences. Ipari energia 4 no.8:183,187 Ag '63.

1. Hotechnikai Kutato Intezet.

KISS, Karolyne, dr.

Conference on the technical language at the Hungarian Academy of Sciences. Ipari energia 4 no.8:187 Ag '63.

1. Hotechnikai Kutato Interet.

PATAKFALVI, Albert, dr.; LENARD, E. Gergely, dr.; KISS, Kornelia, dr.

A contribution to the clinical picture of malignant reticulosis. Orv. hetil. 103 no.9:405-407 Mr '62.

1. Pecsi Orvostudomanyi Egyetem, I Belklinika.

(RETICULOENDOTHELIOSIS pathol)

BOHENSZKY, Gyorgy, dr.; BOKOR, Zsuzsa, dr.; KUSTOS, Gyula, dr.; KISS, Kornelia, dr.

On the significance of phonocardiograms taken from the esophagus. Orv. hetil. 104 no.18:829-831 5 My '63.

1. Pecsi Orvostudomanyi Egyetem, I. Belklinika.
(PHONOCARDIOGRAPHY) (ESOPHAGUS) (MITRAL STENOSIS) (MITRAL INSUFFICIENCY)

KISS, Ladislau

Controlling experimental indexes of school construction manual labor. Constr Buc 15 no.721:3 N '63.

1. Normator tehnolog la Trustul Regional de Constructii de Locuinte, Cluj.

KISS, Ladislau

Fewer hours in constructing an apartment. Constr Buc 16 no. 739:3 7 March '64.

1. Normator tehnolog la Trustul Regional de Constructii de Locuinte, Cluj.

COSMA, Frederic; KISS, Ladislau, tehnician de normare; IENCIU, Traian; BARBALATA, St.; ENESCU, Constantin, tehnician; HOTUPAN, Florian, corespondent; BONCUT, Remus

Problems connected with the organization of production brigades. Constr Buc 16 no.746:3 25 April '64.

1. Trustul Regional de Constructii de Locuinte, Cluj (for Kiss). 2. Saful serviciului organizarea muncii, Trustul Regional de Constructii de Locuinte, Cluj (for Cosma). 3. Saful serviciului organizarea muncii de la grupul de santiere nr.2 Sibiu, Trustul Regional de Constructii de Locuinte, Brasov (for Ienciu). 4. Saful serviciului organizarea muncii de la grupul de santiere nr.1, Trustul Regional de Constructii de Locuinte, Galati (for Barbalata). 5. Saful serviciului organizarea muncii, Directia generala constructii-montaj, Bucuresti (for Boncut). 6. Trustul Regional de Constructii de Locuinte, Arges (for Enescu).

KISS, Lajos

Illuminated rail barrier. Magy vasut 7 no.21:2 2N '63.

KISS, Lakos (Alsoors)

Phototubes for preventing accidents. Magy vasut 7 no.19:2 O '63.

HUNG.

Hungarian bauxites. L. Kiss (Lorand Eötvös Univ., Budapest). Acta Geol. Acad. Sci. Hung. 3, [illegible] (in French).—Chem. analyses including detns. of Cr, V, and Zr are given for 8 samples from Gant. Accessory minerals include zircon, spinel, chromite, beryl, and corundum. Chem. analyses are given of 2 Mn-rich nodules from bauxite deposits. They contain CoO 2.09, 1.54%, and NiO 0.71, 0.27%. Michael Fleischer

[redacted], I.

Technical tasks of the new economic and planning system in the leather and shoe industry; also, remarks by Kornal Nay and others.

P. 30 (BOR-ES CIPOTECHNIKA) Budapest Vol. 7, No. 2, May 1957.

SO: Monthly Index of East European Accessions (AEEI) Vol. 6, No. 11 November 1957.

COUNTRY : Hungary
CATEGORY : D

ABS. JOUR. : RZKhim., No. 1959, No. [illegible]

AUTHOR : [illegible]ts, T.; Kiss, L.
INST. :
TITLE : Investigation of the Material from [illegible] Kaolin Quarries

ORIG. PUB. : Epitoanyag, 1959, 11, No 1-2, [illegible]

ABSTRACT : On the basis of the [illegible] data on geological occurrence, composition (chemical, microscopic, [illegible] [illegible]) and properties, a reconstruction [illegible] of the geological and [illegible] conditions of formation [illegible] kaolin. Th[illegible] starting material [illegible] [illegible] were converted by strong [illegible] [illegible] to [illegible] rocks with inclusions [illegible], [illegible], [illegible]. — [illegible] S. Vorob'yev.

CARD:

KISS, L.

"Power outlook of the world."

p. 128 (Energia Es Atomtechnika) Vol. 10, no. 2/3, May/June 1957
Budapest, Hungary

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

KISS, L.

"Climatic-biological investigation on human beings and vegetal micro-organisms." p. 332

IDOJARAS. (Meterologiai Intezet es Magyar Meteorologiai Tarsasag) Budapest, Hungary, Vol. 62, No. 6, Nov./ Dec. 1958.

Monthly List of East European Accessions (EEAI) LC, Vol 8, No. 6, June 1959 Uncl.

KISS, LAJOS

Vasarhelyi hetkoznapok. Budapest, Hungary, Magveto Konyvkiado, 1958. 311 p.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 7, July 1959
Uncl.

KISS, Lajos, dr., a nyelvtudomanyok kandidatusa

What is the etymology o[illegible]"? Elet tud 18 no.3:85 Ja '63.

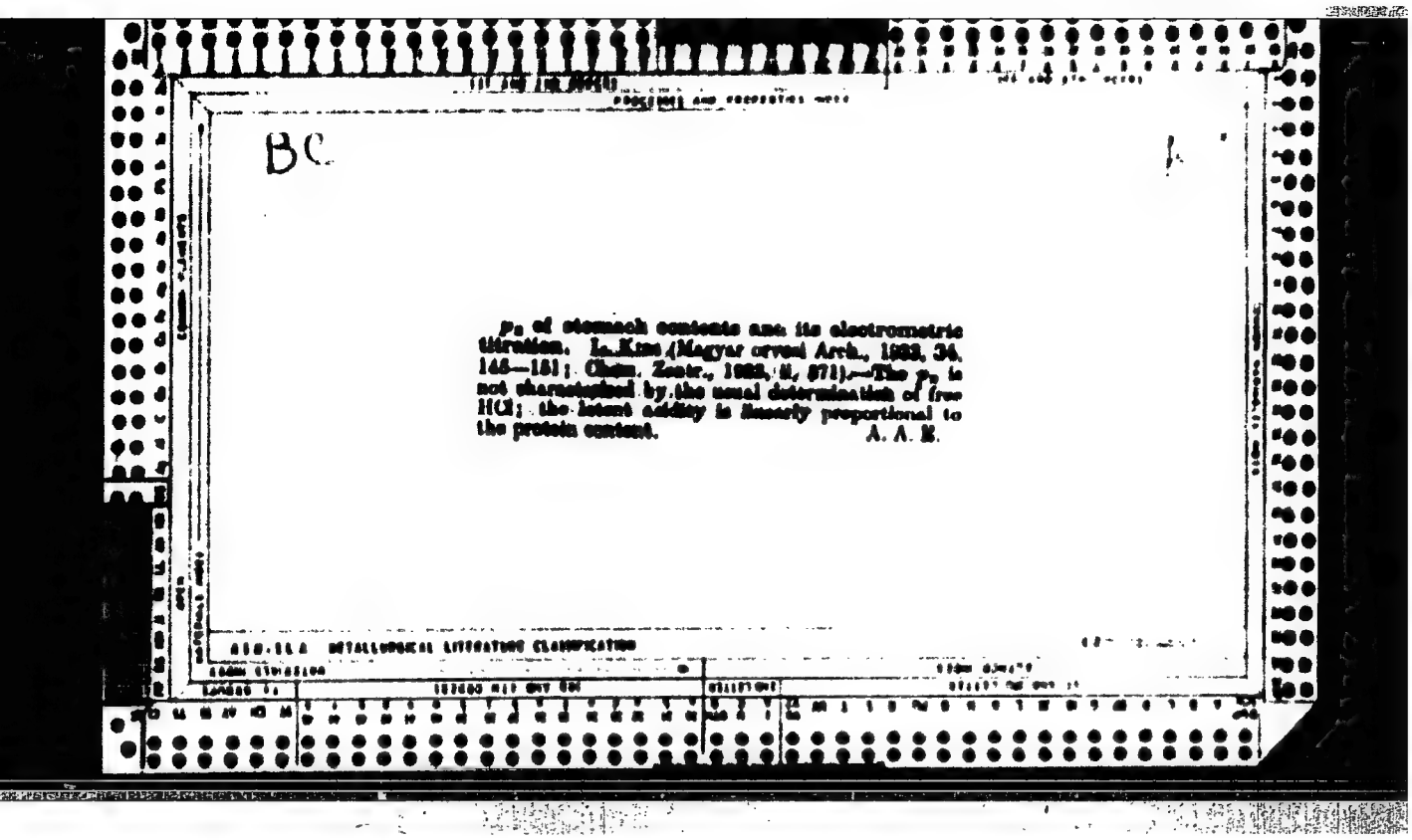
KISS, Lajos

New method for welding the thermit of broken rolling mill cylinders. Muss elet 18 no.10:16 16 My '63.

KISS, Lajos (Alsoors)

An ingenious innovation. Magy vasut 7 no.23:1 2 D '63.

A well-laboring intertrade commission. 4



BC

p_H of stomach contents and its electrometric titration. L. Kiss (Magyar orvosi Arch., 1932, 34, 146—151; Chem. Zentr., 1932, II, 971).—The p_H is not characterised by the usual determination of free HCl; the latent acidity is linearly proportional to the protein content. A. A. E.

GABOR, M.; DUX, M.; KISS, L.

Antagonism between coagulation inhibitors and vitamin P simulants.
Acta physiol. hung. 3 no.1:195-198 1952. (CIML 24:3)

1. Of the Institute of Pharmacology of Szeged University.

GABOR, M.; HORVATH, B.; KISS, L.; DIENER, E.

Prolongation of the effect of adrenalin on isolated organs and in vivo by members of the hematoxylin group. Acta physiol. hung. 3 no.3-4: 585-590 1952. (CLML 24:5)

1. Of the Institute of Pharmacology of Szeged University.

KISS, L.

Action of a new synthetic chromone preparation on the poisoned frog heart. M. Csáky and L. Kiss (Med. Univ., Szeged). *Acta Physiol. Acad. Sci. Hung.* 5, 205-12(1954) (in German); cf. *C.A.* 48, 2003g.—3-Methyl-5,8-dimethoxychromone (I) poisoned a normal heart at a concn. of 1:1000. A concn. of 1:10,000 I did not affect normal hearts, but stimulated frog hearts depressed by urethan, ale., $CHCl_3$, lactic acid, quinine, Ca-deficiency, or by fatigue. S. R.

GABOR, Miklos; HORVATH, Bertalan; KISS, Lajos

Study on the relationship of cardiac effect and chemical structure. Kiserletes orvostud. 8 no.2:113-120 March 56.

1. Szegedi Orvostudomanyi Egyetem Gyogyszertani es Korelettani Intezete.

(HEART, eff. of drugs on
pyrone ring containing cpds., relation of cardiac eff. to chem. structure. (Hun))

KISS, Lajos

Tuberculous allergy. Tuberkulozis 10 no.5-6:97-101 May-June 57.

1. A XXI. keruleti (csepeli) tudobeteggondozo: Szakkay Antal
vezetoorvos: Kiss Lajos dr.)
(TUBERCULOSIS, immunol.
allergy. immun. & sensitization mechanisms (Hun))

JAVOR, Tibor; KISS, Lajos; NAGY, Gyorgy

A surgical method for the production of internal biliary fistulae in dogs. Kiserletes orvostud. 13 no.3:225-227 Je '61.

1. Debreceni Orvostudomanyi Egyetem II. Belgyogyaszati Klinikaja es Igazsagugyi Orvostani Intezete.

(BILIARY FISTULA exper)

KISS, Lajos, dr., o.v. foorvos

Hirepin therapy of non-hypotonic tuberculous patients with complaints in the sternal region. Tuberkulozis 15 no.5:143-144 My '62.

1. A Budagyongyei Tudo- es Szivbeteg Szanatorium (igazgato: Galgoczy Jeno dr.) koslemenye.

(TUBERCULOSIS PULMONARY ther)
(CHLORPROMAZINE ther)
(RESERPINE ther)

KISS, Lajos, foeloado; MATHE, Zoltan, foeloado

Newer instructions for railroad parcel transportation. Kozlekod kozl 20 no.48:792-793 29 N '64.

1. Ministry of Transportation and Postal Affairs, Budapest.

KISS, Lajos

Possibilities for direct broadcasting from telecommunication satellites. Hir techn 16 no.2:56-60 F '65.

1. Experimental Institute of the Hungarian Post, Budapest.

[illegible], Yugoslav engineer [illegible]

Temperature and deformation measurement during welding. Ser
16 no.9:339-341 1964

1. Chair of Mechanical Technology, [illegible] University of
Heavy Industry, Miskolc.

KISS, Lajos

It should be modernized. Magy vasut 7 no. 17: 2 2 S '63.

KISS, Lajos (Alsoors)

Hard-working locomotive engineers. Magy vasut 8 no.10:1
16 My '64.

KISS, Lajos

Change in upper leather assortment and its effect on the use of materials. Bor cipo 14 no. 2:50-53 Mr '64.

1. Ministry of Light Industry, Budapest.

KISS, Laszlo

Importance of raw material supplies from the viewpoint of economical production in the food industry. Elelm ipar 13 no.9:297-300 S '59.

1. Orszagos Tervhivatal.

KISS, Laszlo, dr.

International cooperation of railways in the field of documentation and scientific information. Kozl tud ss 13 no.11:504-513 N'63

1. Vasuti Tudomanyos Kutato Intezet osztalyvezetoje.

KISS, Laszlo

Examination of electrode processes occurring during the dissolution of chromium in sulfuric acid. Magy kem folyoir 65 no. 11:431-436 N '59.

1. Eotvos Lorand Tudomanyegyetem Fizikai-Kemiai es Radiologiai Tanszeke, Budapest.

LENGYEL, Sandor, a kemiai tudomanyok doktora; KISS, Laszlo, a kemiai tudomanyok kandidatusa

An account of the 14th Conference of the International Committee of Elector-Chemical Thermodynamics and Kinetics. Kem tud kozl MTA 21 no.3:339-341 '64.

1. Department of Physicochemistry and Radiology, Lorand Eotvos University, Budapest. 2. Editorial board member, "A Magyar Tudomanyos Akademia Kemiai Tudomanyok Osztalyanak Kozlemenyei" (for Lengyel).

KISS, Laszlo, okl. banyamernok

The new Hungarian bill on mining. Bany lap 93 no. 9:630-634 S 60.

KISS, Laszlo, dr.

Parliamentary proceedings of the first Hungarian mining law.
Bany lap 94 no.2:138-139 F '61.

VARGA, Jozsef, okleveles banyamernok, fomernok; BENCZE, Laszlo, okleveles banyamernok; KISS , Laszlo, okleveles banyamernok , fomernok

Technical development of petroleum engineering and the 25-year old Hungarian petroleum industry. Bany lap 96 no.10:717-732 O'63.

1. Orszagos Koolaj - es Gazipari Troszt, Budapest; "Banyaszati Lapok" szerkeszto bizottsagi tagja (for Varga). 2. Orszagos Koolaj - es Gazipari Troszt vezerigazgatohelyettese, Budapest (for Bencze). 3. Deldunantuli Koolaj - es Foldgaztermelo Vallalat, Bazakerettye (for Kiss).

KISS, Laszlo, dr., okleveles banyamernok

Remarks on the reform curricula of the mining sections of the Technical University of the Heavy Industry. Bany lap 96 no.5:349 My '63.

KISS, Laszlo, dr., okleveles banyamernok

The socialist mining laws. Bany lap 96 no.8:555-559 Ag '63.

1. Orszagos Banyamuszaki Fofelugyeloseg, Budapest.

KISS, Laszlo, dr., okleveles banyamernok

Some chapters from the Hungarian mining law. Bany lap 97 no. 5: 337-341 My '64.

1. National General Inspectorate of Mining Engineering, Budapest.

KISS, Laszlo, dr., okleveles banyamernok

Some chapters from the Hungarian mining law. Bany lap 97 no.6: 411-418 Je '64.

1. National General Inspectorate of Mining Engineering, Budapest.

KISS, Laszlo, dr., ollevelos banyamernok

Some chapters from the Hungarian mining law. Bany lap 97 no.7:489-495 Jl '64.

1. National General Inspectorate of Mining Engineering, Budapest.

KISS, Laszlo, dr., okleveles banyamernok

Coals (stone coals)? Bany lap 97 no.10:719-720 O '64.

KISS, L.

H

HUNGARY/Physical Chemistry. Electrochemistry.

Abs Jour: Ref Zhur-Khimiya, No [illegible], 1958, 75402.

Author : Csah, I.; Balog, J.; Kiss, L.
Inst :
Title : On the Solution of Electrolytic Zinc in Dilute Perchloric Acid.

Orig Pub: Acta phys. et chem. Szeged, 1957, 3, No 1-4, 64-68.

Abstract: The solution rate (SR) of a Zn disc rotating around an axis perpendicular to its plane at the velocity of 350 revolutions per min. in 0.001 to 0.05 n. $HClO_4$ was studied. The SR of Zn was determined by titration and polarographically. It is shown that the SR depends on the $HClO_4$ concentration, and that it is constant at a certain $HClO_4$ concentration (with the exception of the initial

Card : 1/2

KISS, L. ZOLD, E.

The zinc-silver accumulator; a preliminary communication. p. 93.

(Magyar Kemiai Folyoirat. Vol. 63, no. 2/3, Feb./Mar. 1957. Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

A/55, L.

HUNGARY/Chemical Technology - Chemical Products and Their Application, Part 2. - Electrochemical Industries, Electroplating, Chemical Sources of Electric Current. H-12

Abs Jour : Ref Zhur - Khimiya, No 14, 1958, 47396

Author : Ernő Zöld, Laszlo Kiss

Inst : -

Title : Silver-Zinc Storage Cell.

Orig Pub : Magyar kem. folyoirat, 1957, 63, No 12, 334-338

Abstract : The Ag-Zn storage cell SH-12 is described. Its capacity is 12 ampere x hours and its specific energy is 220 watts per liter and 90 watts per kg.

Card 1/1